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ABSTRACT

A comparison was made of the role of midlevel health practitioners and how they came into being and flourished in three countries: the "feldsher" of the Soviet Union, the barefoot doctor of China, and the physician assistant of the United States. Information was gathered from books, journals, periodicals, governments, and newspapers as well as from interviews with a doctor of traditional Chinese medicine, a physician assistant, a Russian medical journalist, and several researchers. The study found that midlevel health practitioners are essential to a country's health care system when there is a shortage and/or a maldistribution of fully trained physicians, when a country is so vast that a large percentage of its population lies beyond modern medical care, and when the centralized government initiates crash programs in an effort to upgrade the public health system. In addition, the research shows that midlevel health practitioners increase in number and importance when popular unrest or upheaval challenge established systems or traditions of health care. Study of the role of midlevel health practitioners can lead to development of a model for using them to provide health care in underdeveloped countries and, in developed countries, in inner city and rural areas that lack physicians. (167 references) (Author/KC)

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BRINGING HEALTH CARE TO THE UNDER-SERVED: THE MID-LEVEL HEALTH PRACTITIONER IN THREE COUNTRIES- - CHINA, THE SOVIET UNION AND THE UNITED STATES

A Thesis Presented To
The Faculty of the Division of Graduate Studies
Brooklyn College of the City University of New York

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Community Health

by
Natalie Kupferberg

June 1990

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Mid-level health practitioners have provided medical care for many people throughout history. This paper analyzes the conditions under which they have come into being and flourished, and the role they play in three major countries of the world. The feldsher of the Soviet Union, the barefoot doctor of the Peoples Republic of China and the physician assistant of the United States are used as the prototypes. Information in this paper comes from books, journals, periodicals, government documents, newspapers as well as interviews. It was found that the mid-level health practitioners are essential to a country's health care system when there is a shortage and/or maldistribution of fully trained physicians, when a country is so vast that a large percentage of its population lies beyond modern medical care and when the centralized government initiates crash programs in an effort to upgrade the public health system. In addition the research shows that mid-level health practitioners increase in number and importance when popular unrest or upheaval challenge established systems or traditions of health care. By

studying the role of the barefoot doctor, feldsher and physician assistant, and learning from their good points and bad many third world and underdeveloped countries may be able to utilize them as a model in their own health care systems. Even in countries with advanced medical care they may also be able to play an important role in providing health care in inner city and rural areas that lack fully trained physicians.

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BRINGING HEALTH CARE TO THE UNDER-SERVED: THE MID-LEVEL HEALTH PRACTITIONER IN THREE COUNTRIES- - CHINA, THE SOVIET UNION AND THE UNITED STATES

Chapter I

Introduction

> "Brilliant in its scientific discoveries, superb in its technological breakthrough, but woefully inept in its application of knowledge to those most in need."
>
> Epitaph on 20th century medicine
> Fendall, 1972

Although Dr. Neville Rex Edwards Fendall had developing countries in mind when he wrote his "epitaph," it applies as well to three of the world's most important and powerful countries, the Union of Soviet Socialist Republics, the People's Republic of China and the United States of America. Doctors without degrees in all three countries are helping to bring basic health care and medical treatment to a large number of patients who otherwise would find it difficult or in some cases impossible to obtain. Known in the health profession as mid-level health practitioners, they function under different names--feldsher in the USSR, barefoot doctor in China and physician assistant in the United States.

The feldsher has been around the longest, having arisen in the 17th century under Peter the Great. They were the civilian

successors of military surgeons, men of limited but practical medical skills. The barefoot doctor, a product of Mao Zedong's Cultural Revolution, came into being in 1965 and represented a deliberate governmental effort to expand basic health coverage to vast regions of China lacking any medical facilities. The physician assistant, who also dates from 1965, and whose future position is still evolving, was a reflection of changes in the U.S. health care system since the Second World War. These included a growing emphasis on specialization and the near disappearance of the family physician.

In each country these mid-level health providers were intended to supplement rather than replace the care provided by full-fledged physicians. Yet, particularly in the Soviet Union and China, their role has become so essential that it is difficult to picture the national health system operating without them.

All mid-level practitioners share a common purpose, that of bringing health care to those who need it most. This paper will survey the history and background of these practitioners, study their method of operation and attempt to evaluate their contributions. It will not speculate on what their applications may be elsewhere. However, by studying in depth the successes, failures and problems of mid-level practitioners in three different societies, we may be better able to gain an understanding of their potential for strengthening the health care systems of both developed and undeveloped countries.

Most studies of mid-level health practitioners are limited to their activity in individual countries. Dr. N.R.E. Fendall, a British physician and Doctor of Public Health who had first hand experience in Nigeria, Malaya, Singapore and Kenya, has been the only authority I could find who has studied the mid-level health professional in general theoretical terms. Calling this person the medical "auxiliary" in medicine, he stated that "most of the time lag between the discovery of knowledge and its extensive application lies in the reluctance and inability to admit that lesser-trained persons can carry out routine tasks in medicine" (1972, 1292). Dr. Fendall defined auxiliary as "helper" and said such persons should have a middle school education of seven to nine years and a "technical education that is limited in breadth, depth and time" (1967, 474).

In one of his many articles on the subject, he gave the following statistics: In the developed world one physician graduates for every 350 babies born, while in the underdeveloped world the ratio is 1:3,500 or more. In order to have one physician for every 770 people, another three and one half million physicians would be needed at a cost of $87.5 billion (1972, 1293). In addition, he noted the problem of physician maldistribution, i.e. attracting and keeping doctors in rural areas.

Dr. Fendall envisioned the medical auxiliary as being "much nearer to the people he serves in thought, culture and way of life." To stay in rural areas he would have to be content "with

a less sophisticated way of life" (1968, 617). In 1972 Dr. Fendall published the book Auxiliaries in Health Care: Programs in Developing Countries, based on his first hand experiences as a public health officer in the third world.

In 1979, Doris Storms wrote Training and Use of Auxiliary Health Workers: Lessons From Developing Countries, which covered much of the same material. Both of these books mainly aimed to give practical advice to health planners and administrators in using auxiliaries in third world countries. In her introduction Dr. Storms says, "the desirability of training auxiliary health workers is as much a political decision as a technical one...Health care delivery may appear to be a neutral entity, but it is not" (5-6). This paper will demonstrate that this is true in every society, and that the health practitioner's role is almost always influenced by the political situation.

In 1969, Edward and Judith Forgotson studied the roles of the intermediate health workers in the United Kingdom and the Soviet Union. In their report for the Rand Corporation, they conclude that neither the British nor the Soviet model could be used in the United States, but that the U.S. could be guided by their flexible approach to the use of medical auxiliaries.

Alfred Yankauer, in the New Health Professionals, gives a brief historical background of mid-level health practitioners, saying that "whenever there has been a perceived scarcity of qualified physician services, society has granted permission to diagnose and treat disease and disability to others 'less

qualified'" (1982, 250). Two studies briefly compared the physician assistant to the Soviet feldsher (Storey, 1972 and Pickard, 1987). Milton Terris, in 1977, proposed solutions to end what he saw as a crisis in primary health care in the United States. He briefly mentioned the feldsher and the barefoot doctor but concluded that these approaches would not work here. James Cawley and Archie Golden came to the same conclusion in 1983 when they wrote about problems facing physician assistants and nurse practitioners. In both these articles the focus was on the United States, and the question studied was whether or not one country's experience could be directly transferred to another country.

Purpose of the Study

The purpose of this paper is to analyze the conditions which gave rise to the profession of mid-level health practitioner in the U.S.S.R., China and the U.S. and to examine the work of the feldsher, barefoot doctor and the physician assistant. An understanding of how these three countries have faced the problem of bringing health care to large populations may help developing countries that are trying to bring modern health care to their own populations.

Statement of the Problems

1. Why did the U.S.S.R., China and the U.S. have a need for mid-level health practitioners?
2. Who are these mid-level health practitioners?
    a. What is the educational background of the mid-level health practitioner?
    b. What is the function of the mid-level health practitioner in the general health care system?
3. How does a country's geography, transportation system and level of development affect the number, role and status of the mid-level health practitioner?
4. How do social conditions, level of unrest and politics affect the work of the mid-level health practitioner over a period of time?
5. How does an improvement in a country's health care delivery affect the role of the mid-level health practitioner?

Hypotheses

The mid-level health practitioner is a vital member of the health care team, one who plays a particularly important role in times of social upheaval and unrest and is of particular value in countries with remote or scattered populations.

1. The mid-level health practitioner becomes essential to a

society's health care system when there is a shortage of fully trained physicians.

2. The mid-level health practitioner is of particular value when a country or region is so vast that it has many people who live beyond the reach of state of the art medical care.

3. Mid-level health practitioners increase in number and importance when popular unrest or upheaval challenge established systems or traditions of health care.

4. Centralized governments can institute crash programs to create mid-level health practitioners in an effort to upgrade the public health system.

Limitations

The study is confined to three types of current mid-level health practitioners: the feldsher of the Soviet Union, the barefoot doctor of the People's Republic of China and the physician assistant of the United States. It also examines a previously important mid-level health practitioner, the barber-surgeon of pre-modern Europe. Particular emphasis is placed on the feldsher and the barefoot doctor because these models have become part of the mainstream medical care systems of their countries. Except in the case of nurse practitioners in the U.S., who perform similar functions to physician assistants, this paper does not deal with nurses.

Only English language sources were used. This was not so

much of a problem with China because considerable material is available in English. Since 1972, when travel to China from the United States became possible, many Americans have visited the country and written about its health care system. Translations of material originally written in Chinese have been available since the early seventies. The Chinese Medical Journal has been published in English since 1973 and the Barefoot Doctor's Manual has actually gone through two American editions. There is an excellent account in English of medical care in China from 1949 to 1965 in Joshua Horn's book Away With All Pests. Several other accounts of this period appear in British medical journals. It would have been useful to have more material available in English from the beginning of the Cultural Revolution in 1966 to 1972.

Finding material in English on the Soviet Union is more of a problem. Two American physicians, William Knaus and Mark Field, have written authoritative books on the Soviet health care system, while reports of its deficiencies and merits appear quite often in American newspapers and magazines as well as in scholarly publications. The Current Digest of the Soviet Press comes out weekly and translates major stories from newspapers, magazines and scholarly journals into English. Pravda is now available in English. Feldsher I Akusherka (Feldsher and Midwife) is not available in English nor are there English abstracts of the articles. It would have been useful to go through this journal to learn about the current activities of the feldsher as well as his education and status. I have not found

any Soviet medical journals available in English.

Keeping up with the recent rapid changes in the Soviet Union and China is virtually impossible. The beginnings of Western style capitalism, as I will show, have already had an effect on medical care in China; but we will not know for several years what their effect on the barefoot doctor will be.

In March, 1985 Mikhail Gorbachev opened a new era in Soviet history. It is too soon to tell how glasnost (openness, candor) and perestroika (restructuring), will affect the country's health care system in the long term. There are already some documented changes, however. These include increased educational requirements for physicians and the opening of the first fee-based hospital in Moscow. Some of these changes will be briefly covered. I have tried to make this paper as current as possible as of January, 1990.

Operational Definitions of Terms

Mid-Level Health Practitioner or Provider - a person who provides medical or health treatment and advice without holding the rank of physician, yet possesses at least a basic knowledge of medicine. This knowledge may be the result of practical experience or elementary medical education, but is ideally a combination of both.

Importance of the Study

A study of the mid-level health practitioner will

1. give historical perspective to a vital member of the health establishment.

2. examine his or her present function and future role in providing health care to a huge population.

3. add information in the field of comparative analysis of health care systems. Many countries are facing the same problems of a lack of access to medical care for a large percentage of their population due to a scarcity and maldistribution of physicians. Although the problems are similar, the approaches to solving these problems may be quite different. By examining these same problems and issues and noting the similarities and differences in solving them, it is possible to learn of different solutions. Of course one country's approach can never be fully transplanted to another. "A health care system reflects the historical, cultural and political as well as economic context within which it develops" (Field 1989, 5).

4. assist health planners and administrators in actually developing and setting up programs in which mid-level health practitioners play a role in bringing medical care to an individual community or nation. This could benefit underdeveloped countries. For example, developing countries in Africa, Asia, South and Central America are using auxiliary health workers to provide primary health care. Communities in

developed countries which lack doctors also rely on mid-level health practitioners.

Methodology

Information in this paper comes from extensive library research and interviews. Scholarly books, journals and periodicals as well as government documents were consulted, supplemented by journalistic sources in magazines and newspapers.

In the case of China, I was able to interview a doctor of traditional Chinese medicine studying in the U.S. who had worked with red guard doctors and had first hand knowledge of the country's health care system.

With respect to the U.S., I interviewed a physician assistant in New York City who works with homeless people. I also talked to a free lance medical journalist from the Soviet Union who now lives in the United States who, without adding any first hand information, confirmed what I had been reading in books and articles about Russia.

In addition, I interviewed Dr. Ruth Sidel, professor of sociology at Hunter College of the City University of New York, a leading authority on health care in China. She and her husband have also studied the feldsher in the Soviet Union.

The next chapter will begin with a review of the role of the barber-surgeon, the first mid-level health practitioner to function on an organized and systematic basis. This will be

followed by a study of the feldsher in the Soviet Union, the barefoot doctor of the People's Republic of China and the physician assistant of the United States.

Chapter II

The Mid-Level Practitioner: Historical Background

Mid-level practitioners have existed in many societies, functioning in the past under various names: midwives, herb-gatherers, salve dealers, drug dispensers, bone-setters, barber surgeons, even wizards and faith-healers (Garrison 1929, 118). In modern times they have been known as feldshers, barefoot doctors and physician assistants. Despite differences in time, place, education and training, their function has been largely the same: to provide medical treatment and advice to patients who lack ready access to top level physicians.

In ancient times, actually, more people were served by what we should now call "mid-level" practitioners than doctors of the highest rank. Physicians, few in number, placed their skills--such as they were--at the disposal of members of the elite, leaving the less skilled practitioners, in Will Durant's phrase, "to gather the crumbs and heal the poor" (1942, 182).

Upper class patients, however, were not necessarily better off medically then fellow citizens in ancient civilizations. Many supposedly learned physicians dealt in theories rather than in practical medicine. Some of them regarded disease as a consequence of the movement of the stars. Before the time of Hippocrates (c. 400 B.C.) Greek medicine "was regarded simply as

a branch of philosophy" (Kitto 1957, 188). Lacking such abstruse "knowledge," the ordinary healers relied basically on empirical observation and homemade and natural remedies.

Even in midwifery, perhaps the oldest medical profession, there was a split between those employed by the common people and those used by upper classes. Garrison calls the midwife "one of the most ancient of professional figures" (1929, 31), while the Encyclopedia of Medical History says she is "as old as birth itself" (McGrew 1985, 203). Most midwives were uneducated women who acquired their skills by experience and apprenticeship. However, particularly in France and England, elite groups were established of middle-class, better educated women who found midwifery a respectable way to support themselves and develop a career. Only in the nineteenth century, with the development of gynecology and obstetrics as medical specialties, did midwives give way to male physicians taking charge of childbirth procedures. In recent years there has been a modest revival in the use of midwives, who are usually registered nurses with specialized training. The reemergence of midwives is a result, in part, of the movement towards a more natural approach to birth, one free of excessive medical intervention.

The activities of midwives in ancient times gave many of them a reputation as "wise women," whose skillful use of herbs and drugs to ease labor pains could perhaps be helpful in treating other conditions (Ehrenreich 1973, 15). A few women in ancient Rome actually practiced a more generalized medicine

(Jackson 1988, 86-87). Full fledged female physicians were not very common until the modern era.

Neither ancient Greece nor ancient Rome developed a system of professionalized medicine in any way comparable to that of modern times. There were no medical schools; aspiring physicians learned as best they could from those already in practice (Garrison 1929, 91). Similarly, no real system of regulation or licensing existed, although certain individuals in Athens received a designation as "public physicians." The Romans, through town councils, designated certain physicians as medici, indicating a superior status (Jackson 1988, 37). Less elite practitioners, however, were far more plentiful, their Latin designations being rhizotomi (root-gatherers), pharmacopoloe (drug-peddlers), unguentarii (salve dealers), obstetricoe (mid-wives) and others (Garrison 1929, 118).

Most important, perhaps, in the development of practical though still primitive medical and surgical treatment, were the military practitioners who learned their trade literally from the ground up by treating wounded warriors on the field on which they had fallen. According to Homeric legends, these field-doctors were themselves soldiers who displayed an aptitude for medical work. In Xenophon's account of his invasion of Persia with 10,000 Greek troops, he refers to eight surgeons who accompanied the expedition (Garrison 1929, 91). The Romans, whose armies occupied much of Western Europe and Britain, organized a far more systematic military medical corps, but in times of peace most of

the practitioners, especially those in the lower hierarchy, faded into local communities, joining the herb-gatherers, drug-sellers and humbler physicians in their work (Jackson 1988, 137). The Russian feldshers, those modern mid-level practitioners who also developed from military medical service, could, if they wished, trace their lineage back to the Roman empire.

The coming of the Middle Ages brought little change in the medical hierarchy, with the overwhelming bulk of the population continuing to be medically dependent upon the "humbler practitioners." No true medical profession yet existed. The Oxford English Dictionary ascribes the earliest use of the word "profession" to the sixteenth century, and it was at least two centuries later that a medical profession and governmental regulations for education and practice, came into being in Europe (McGrew 1985, 181). Medical schools developed slowly. The School of Salerno is documented as being the first; it was in existence by 1100 but certain sources say it goes back to the ninth century (Garrison 1929, 147). Prior to that, medical education of any kind was obtainable principally through working as an apprentice with an established physician or perhaps by entering a monastery, for medieval monks developed considerable medical lore. They treated their fellow monastics who fell ill, using an extensive pharmacology of herbs.

During the twelfth century other European cities began following the lead of Salerno by establishing medical schools. Those of Bologna, Montpellier and Paris were especially well

known (McGrew 1985, 79). However, the number of skilled physicians such institutions turned out was very small. In the mid-fourteenth century, when the Black Death struck Europe, there were, according to the historian Barbara Tuchman, only twenty-four physicians in Venice, a city of over 100,000 (1970, 100). In The Dictionary of the Middle Ages, Michael McVaugh's statistics for Paris, London and Valencia, indicate that just prior to the Black Death there was an average of three full-fledged physicians and three full-fledged surgeons per 10,000 of urban population in these three cities (1982, 254). Obviously with figures like these, most medical care had to be provided by healers without academic credentials of any kind.

The important place held by such practitioners is demonstrated by the career of the Swiss physician Paracelsus (1493-1541), one of the most famous of medical pioneers. Paracelsus began his medical career as a barber-surgeon in the army of Charles I of Spain. Although he eventually obtained a medical degree, becoming the official city physician of Basel, and taught at the university there, he got his basic medical knowledge from talking and working with barbers, midwives, executioners, bathkeepers, gypsies and fortune tellers, thus obtaining, according to the medical historian Fielding Garrison, "an unusual knowledge of folk-medicine and a permanent taste for low company" (1929, 204).

Paracelsus put himself at odds with contemporary physicians by disdaining the medical theories of the past, which they

revered. He publicly burned the classical treatises of Galen and Avicenna, and lectured instead to his students about his own practical experiences. He contended that medical knowledge was to be gleaned, "not by strictly adhering to the rules of the ancients, but exclusively by studying nature and using the experiences we have gained in long years of practice" (Durant 1957, 878). Although the medical establishment of his day remained hostile, Parcelsus became famous for his treatments and his cures. When he died in Salzburg, Austria, he left his instruments to the barber-surgeons of the town, for it was as a barber-surgeon that he had gained most of his knowledge.

Who were these barber-surgeons and what did they do? The question is important to any study of medical history and particularly to one that is devoted essentially to mid-level medical practitioners. The barber surgeons were the first mid-level practitioners to be described as functioning in a systematic manner. Their existence is documented from about 1100, the time they began to form themselves into guilds. They held a high position in the hierarchy of medical practice, well below that of university medical school graduates, but much higher than the herb-gatherers and faith healers. Urban dwellers who could afford to pay for treatment depended upon the barber surgeons for their major medical needs (Ackerknecht 1984, 546). The barber-surgeons also functioned in rural areas, traveling from village to village (Lindberg 1978, 407).

Surgery in medieval times was regarded as an inferior branch

of medicine. The early medical schools did not teach it, regarding it as a branch of artisanal or manual labor. University-trained physicians considered themselves to be observers and consultants, not active participants in the healing process. Surgery was beneath their dignity. In Paris, the medical faculty required their students to swear they would perform no surgery, not even blood letting (McGrew 1985, 204). Surgeons wishing to become physicians first had to renounce their former craft (Strayer 1983, 82).[1]

Although it is not completely clear how the functions of barbers and surgeons became combined, the process probably started in the early middle ages when barbers were trained for the purpose of both shaving and bleeding the occupants of monasteries (Garrison 1929, 172). Blood letting was one of the most common medical procedures for centuries. The barber's pole, still in almost universal use, is a symbol that goes back to the medieval barber-surgeons, with the stripes indicating the ribbon used for bandaging the arm in bleeding. As their trade developed, the barber surgeons rendered a tremendous variety of surgical and other medical services. Treatment of trauma was a major function. They reduced fractures, amputated mangled limbs, cared for wounds, repaired hernias, removed cataracts, and cut out urinary tract stones. At the same time they pursued their original calling of hair trimming and shaving. They also pulled

---

[1]Ironically, whereas modern surgeons command some of the highest fees in the medical profession, in medieval times they were at the bottom end of the scale.

teeth. Apparently there was little difference between the instruments they used for barbering and for performing surgery; a razor sharp knife was their primary requisite. They made some attempts at anesthesia, using sponges dipped in opium, mandrake, hemlock and other soporifics (Strayer 1983, 99). Hans Sachs, the cobbler, poet and singer who lived in Nuremberg from 1494 to 1576 and who was immortalized by Richard Wagner in his opera Die Meistersinger, described the legal occupations of the barber-surgeons in a set of rhyming texts he wrote for a series of woodcuts:

> I am called everywhere
> I can make many healing salves
> I can cure new wounds
> Also fractures and chronic affections
> Syphilis, Cataract, Gangrene, pull teeth
> Shave, wash and cut hair
> I also like to bleed (Ackerknecht 1984, 545-546).

With the importance of their role as health-care providers so extensively recognized, the barber-surgeons established guilds setting their own standards, regulations and qualifications. Of course, there were individuals who continued to practice medicine on their own without membership in a guild, but these "lay practitioners," including faith-healers, never received authorization of any kind (Webster 1979, 182-184).

The barber-surgeons, on the other hand, gained official or semi-official status through their guilds, which were the equivalent of the guilds established by other tradesman and

artisans. Usually guild membership involved inscription in the guild records, the swearing of an oath, agreement to abide by regulations and the payment of a fee (Strayer 1983, 99).

Through all these developments, the barber surgeons continued to learn their craft through practical experience rather than through enrollment at medical institutions. In some cities they had to serve as many as eight years of apprenticeship before the guilds authorized them to function independently. Meanwhile medical schools attached to universities continued to emphasize theory rather than practical methods, and many physicians graduated with little or no actual experience in treating patients. John Hale wrote that in the fifteenth century "the physician was often perceived as someone who charged a great deal but whose plume failed to disguise his lack of success" (1971).

Many barber-surgeons, by contrast, with plenty of practical experience, were forced to work among the poorer classes where, despite their guild membership, they barely scraped by economically (Strayer 1983, 100). Nevertheless, they were the "doctors" who for hundreds of years treated the majority of the population throughout Europe and England and were, according to Erwin Ackerknecht, the true "ancestors of today's medical practitioners" (1984, 545-546).

The barber-surgeons were also the largest group of practitioners offering genuine medical treatment, by far outnumbering the university trained physicians. In Geneva the

ratio of physicians to barber-surgeons was 8:90 during the fifteenth century and 3:40 during the first half of the sixteenth century. As late as 1790, Zurich had four university trained physicians, eight midwives and thirty-four barber surgeons. In Lucerne, in 1800, the ratio was sixteen university doctors to ninety five barber-surgeons. Even in medieval Paris, a university center, the university doctors were always outnumbered by the barber-surgeons (Ackernecht 1984, 546).

In London the Barbers Guild received its first royal charter in 1462, although it had been in existence for many years earlier. In 1520 the barbers joined forces with a group called the Fellowship of Surgeons to form the "Mystery and Communality of Barbers and Surgeons of London" or the Barber-Surgeons Company as it became known (Webster 1979, 173).

Margaret Pelling and Charles Webster have made a quantitative study of the various types of medical practitioners functioning in London during the period 1580-1600, when the total population was around 200,000. Here are some of their findings:

Physicians - 50 (including 20 who were still candidates i.e. students)

Barber-surgeons - 100 (members of the Barber-Surgeons Company)

Apothecaries - 100 (herb compounders and sellers who belonged to the Grocers Guild)

Lay Practitioners - 250 (most of these were unlicensed individuals who functioned without authorization. Nurses and midwives were not included.)

The Barber-Surgeons Company was the largest organized group in London specifically dedicated to medical-surgical practice,

and by the sixteenth century had grown so strong that it could challenge the authority of the smaller College of Physicians, which represented the university trained doctors. For example, it persuaded the civic authorities to grant its members the use of the bodies of executed criminals for dissection rather than leaving these under the control of the university physicians. The Barbers Company also won the right to conduct lectures in anatomy apart from the College of Physicians (Webster 1979, 176). "It is difficult to avoid the impression that the elite of the Barber-Surgeon Company were, in the last decades of the sixteenth century, making a more active and original contribution to medicine than were their colleagues in the College of Physicians" observe Margaret Pelling and Charles Webster.

Licenses to practice medicine in the Middle Ages were issued either by the universities or, at least in the case of England, by ecclesiastical authorities. However, in England as well as in Italy and France, a document of membership in a barber-surgeons organization was considered adequate official authorization to practice (Webster 1979, 215).

Naturally the rise of the barber-surgeons to a significant place in the medical hierarchy was irksome to many of the university physicians, and certainly to the organizations that represented them. The College of Physicians in London met periodically to consider methods to curtail the "bold and ignorant multitude of empirics practicing medicine" (Webster 1979, 182). The university trained physicians in England tried to

restrict the activities of the Barber-Surgeons Company. They also brought lawsuits against individuals. Such persecutions were frequently aimed at female practitioners, with twenty-nine such cases recorded between 1550 and 1600 (Webster 1979, 186-187). Nevertheless, the mid-level practitioners grew at a faster rate than the physicians, with most patients regarding the barber-surgeons as "far more useful than the pretentious book doctors" (Ackerknecht 1984, 547).

Despite the enmity of the university physicians, the barber surgeons kept gaining in stature until, in the era of the Renaissance (basically in the sixteenth century), they began to win acceptance even from the full fledged doctors. Recognition of their improving status began as early as 1210 when a dispute occurred at the College of St. Cosme, a new medical school in Paris. Certain students at the college, who wore long robes, were entitled to perform surgery freely, while others, who wore short robes, could do so only after passing a special examination. Many faculty members "disliked the pretensions of the long-robed surgeons" and accordingly formed an alliance with the barber-surgeons guild, in an effort to break the monopoly of the long-robes. For the first time the barber surgeons were permitted to attend lectures by the medical faculty (McGrew 1985, 31). This spirit of cooperation lasted at the school for many years, ending only when the barber-surgeons made demands that the faculty considered excessive--such as the right to have cadavers of their own for anatomical demonstrations.

A spirit of reconciliation between the barber-surgeons and physicians continued to grow in many cities, even if that growth was intermittent and sporadic. In many medical schools when cadaver dissections were performed a physician read from a textbook (often Galen) while a barber-surgeon performed the actual dissection. Theory and practice thus came together, however warily. As a result of the achievements of the barber-surgeons, more and more university trained physicians began to demand instruction in surgery and to practice it themselves. In the fifteenth century the Universities of Padua and Bologna established chairs of surgery.

The increase in training and skills of university-educated surgeons gave a new respectability to the surgical craft, and it moved medicine in general away from purely theoretical considerations toward greater practicality (Webster 1979, 328-331). Although the barber-surgeons thus faced increased competition, they also benefited from the fact that surgery was now on a much higher level than previously. It was almost as if their activities all along were now receiving an endorsement from the universities..

By the sixteenth century in England, barber surgeons, university surgeons and university physicians actually began working together. In the town of Norwich, the Barbers Company changed its name to "Barber-Surgeons and Physicians" in 1550, while in the town of York the guild became known as the Barbers and Surgeons rather than the Barber-Surgeons (Webster 1979,

213). A few years later the College of Physicians and the Barber-Surgeons Company of London entered into an alliance. One of the first things they did was to attempt to curtail the medical activities of the "empiric", meaning apothecaries and lay-practitioners.

Eventually, the rise of surgeons to a status equal to physicians, spelled the end of the barber-surgeons in Western Europe, although as noted, they managed to persist in several cities into the beginning of the nineteenth century. As mid-level practitioners, they had provided the backbone of medical care for millions of people, most of them poor, through a turbulent and troubled period of history. Surveying the three basic healers of the Middle Ages and the Renaissance, physicians, surgeons and barber-surgeons, the great medical historian, Dr. Fielding H. Garrison, has written: "The lay barber...was, in some respects the most worthy of all three since he was driven to study nature at first hand."

Another form of the mid-level health practitioner was the Officier de Santé of France, who was actually incorporated into the formal medical system of the land in 1803. This official grade of Officier de Santé was established in legislation submitted by Antonie Franscois de Fourcroy (1755-1809), a scientist and educator charged by Napoleon with reorganizing the French medical care system. The Officier de Santé was created to alleviate health manpower shortages in the armed services and rural regions. The title was used both in civilian and military

health care (Nouveau Petit Larousse 1952, 706). Educational qualifications included six years of apprenticeship with a physician plus five years of hospital work or three years study at a medical school. An examination was required, and specific limits were placed on the Officier's functions--for example, they were permitted to perform only operations. This appeared to be the first time in history that the qualifications and duties of a mid-level health officer were formally spelled out (Cawley 1985, 135). Such officiers were officially designated as "doctors of the second class" (Heller 1978, 25).

However, the Officier de Santé did not prove to be a permanent addition to France's health care system. Social and economic conditions improved, the physicians demanded a single qualifying degree for the medical profession, and the new mid-level rank was attacked as fostering inferior practitioners. The Officier de Santé began to decline in use and numbers, and the grade was officially abolished in 1892 (Heller 1978, 37). It would remain for other countries to blend mid-level health practitioners into their public health systems on a continuing and permanent basis. This development took place in eighteenth century Russia and twentieth century China, with the rise, respectively, of the feldsher and the barefoot doctor. These two mid-level practitioners will be considered in detail in the next two chapters. Following that, I will discuss the physician assistant of the United States, a mid-level practitioner who rose in somewhat different circumstances.

Chapter III

The Feldsher of the Soviet Union

The Soviet Health Care System Today

The Union of Soviet Socialist Republics is the largest country in the world, occupying one sixth of the earth's land surface. Its land area covers 8.6 million square miles and has varied geography and all extremes of climate. The population in 1989 was 287,015,000 and included over 100 distinct national groups. Approximately 64% of the people live in urban areas (World Almanac 1989, 725).

The USSR is divided into fifteen geopolitical divisions called republics. Each republic is subdivided into oblasts (regions), and each oblast into rayons. The population of an oblast ranges from half a million to several million, that of a rayon from a few thousand in rural areas to half a million in a city. This organizational structure is used for health administration, with the rayons divided into uchastocks (community units served by a physician). Each republic has its own Ministry of Health responsible to the Ministry of Health Protection, USSR, located in Moscow.

Soviet health services are based on the premise that the health of the people is the responsibility of the state. The Soviet or All Union Minster of Health is ultimately responsible for all the medical and health activities of the fifteen republics. In 1990 this person is Yevgeni I. Chazov (Permanent Mission of the U.S.S.R. to the United Nations, Telephone communication, April 5, 1990) a prominent cardiologist and co-winner of the Nobel Peace Prize (Field 1988,330). This position is always filled by an eminent physician who usually combines administrative duties with a limited clinical practice. He is advised by a thirty member Medical Collegium composed of key persons in the Ministry, top medical administrators and researchers, representatives of trade unions, and Communist Party functionaries. The Collegium reviews and evaluates proposals originating from the Semachko Institute which does health research in medical care organizations. It is the Soviet or All Union Ministry of Health that administers the work of the feldshers[2] as well as most other branches of the Soviet health system.[3]

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[2]Although feldsher should be underlined since it is a foreign word, I have chosen not to underline it because it is repeated so frequently.

[3]There is also a Departmental Health System which consists of facilities reserved for employees of specific ministries with specific medical needs such as the KGB, Ministry of Railroads and Ministry of Defense. These are not formally the responsibility of the All Union Minister of Health (Saltman 1988, 317).

The Feldsher - History

The feldsher, today's mid-level health care practitioner in the Soviet Union, reaches further back into history than any of his or her counterparts in other countries, and probably plays a more important role in their nation's medical system. The feldsher's role has changed as Russian history has changed, and, despite efforts of the Soviets to replace feldshers, he or she is likely to go on serving an important function well into the future. According to Vincente Navarro, the former editor of the International Journal of Health Services, no comprehensive history exists of feldsherism in Russia.

Closeness to the population is still one of the feldshers most significant characteristics, and it has been since their emergence on the scene some 200 years before the appearance of the French Officier de Sante.

In 1620, Russia established its first official medical administration with the creation of the Apothecary Board to appoint military surgeons, distribute drugs and examine credentials of doctors from abroad. A need for lower level medical care was soon apparent to the authorities, so in 1654 the board set up a training school for "lekers," these being the forerunners of feldshers. "A leker or treater was equivalent to the barber-surgeon of the West, who treated patients but knew very little medicine. A doctor, by contrast, knew medicine but

did not usually treat patients" (Field 1967, 17). In other words educated physicians were strong on theory but did very little practical work except among the aristocracy. Lekers, who had four to six years of training, served in the military. The leker school had only a brief existence, its function being taken over by military hospitals such as those in Smolensk in 1656 and in Moscow in 1678. The Apothecary Board went through several name changes and finally became the Medical Collegium in 1763 (Field 1967, 17).

Russian medicine owes a great deal to Peter the Great (1672-1725), who was himself an amateur surgeon (Navarro 1977, 10). In an effort to raise medical standards he established Russia's first medical school in Moscow in 1706. Similar schools (these were called hospital schools and later "mediosurgical schools") were then established in St. Petersburg (1710) and Kronstadt (1720). A medical faculty began functioning in conjunction with Moscow University in 1764 which was followed by other schools connected to universities. In 1721, he authorized a licensing system by which the state reserved the right to determine who was competent to practice medicine and in many cases wanted to know what the physician did. By 1802, there were 1,519 physicians registered in Russia instead of the 150 doctors and lekers of a century before (Field 1967, 19).

Peter the Great's main contribution may have been in making Russian medicine part of mainstream European medicine. He imported scientists, books and scientific collections from Europe

and visited European medical schools. The Academy of Science, which still exists, was founded a year after his death.

Peter the Great also introduced the leker into the Russian army. With a huge military establishment and a minuscule number of physicians (few wanted to enter the service), there was an urgent need for practitioners with at least minimal skills. The medieval barber-surgeon provided an obvious answer. In fact, military medical personnel at first were called "tsiriulniks," or barbers. The term "feldsher," which came into use later, derives from two German words: Feld - (battle) field and Scherer - barber (Vlassov 1989, 28). The early feldshers were drawn from the lower social classes, the sons of peasants, petty tradesmen or minor clergy. Although an ability to read and write was a prerequisite, many possessed only a bare functional literacy. Essentially, they learned their skills on the job, in military hospitals or small field infirmaries: bandaging, bloodletting and bone setting. The first training program was launched in the 1740s when a small number began to study at the Kronstadt Military Hospital near St. Petersburg.

Since military service in the Czarist army until 1874 was for a term of twenty-five years, the feldshers had plenty of time for their training on the job. Even with ten years off for good behavior, the number of feldshers who survived to retire was not large. However, those who did often became civilian feldshers, charging fees for their services. In many areas they were the only health care providers available to the peasant population

(Kenyon 1985, 25). They were called rotnye, or company feldshers because of their previous military service. Due to the lack of real qualifications, the care they provided to their patients was rarely of the best. According to Samuel Ramer, Assistant Professor of History at Tulane University, their popular image was that of an invincibly ignorant older man, often an alcoholic, who had been so beaten down by army life that their most prominent traits were servility, avarice and cunning. This appraisal is reflected in a popular saying that went: "Feldsher don't cure you, they only cripple you" (Ramer 1976, 215). A similar picture is given in the book Russian Medicine in an Era of Reform and Revolution: 1856-1905 by Nancy Frieden who, in describing hospitals of the period, referred to the "coarse treatment by drunken feldshers" (1981, 85).

The Crimean War (1853-1856) was one of the most costly in human terms ever fought until that time. It provided a turning point for feldshers, as for most other components of the Russian medical system. The hard-fought struggle between the British, French and Ottoman Turks on one side, and the Russians on the other, brought such suffering to the casualties on both sides that improvements had to be made in military medicine, including the development of the nursing professional by Florence Nightingale (Sidel, V. and R., 1983, 181).

Another turning point in the development of Russian medicine and medical organization in the nineteenth century was the creation of the "Zemstvo" system of local government, established

in 1864 by Alexander II (1855-1881), as part of the reforms introduced after the Emancipation Proclamation (1861) which freed the serfs (Field 1967, 20). "Zemstvos were local district assemblies charged with administering programs of education, public health, charity and law enforcement" (Pickard 1987, 163). The word zemstvo itself comes from the word zemilia, which means the "land", in contrast with large urban areas (Field 1957, 1). Zemstvos' functions included road building, supervising prisons, education, public welfare, social assistance, and medical care and public health. The inhabitants of a district (the smallest administrative territorial unit) elected the zemstvo assembly which in turn elected an executive board or committee which sent delegates to the provincial land assemblies, the next administrative unit. The central government appointed provincial governors who still had the right to intervene in the work of the zemstvos (Field 1967, 20). According to Navarro, zemstvo medicine represents the "first case in the world of organizing medicine and hospital care services on a large scale" (1977, 9).

The feldsher system developed rapidly under zemstvo government administration. In fact, the basis was laid for its operation to this day. The zemstvos were always short of funds and spent little on health matters. As late as 1886, only 8.3% of a typical zemstvo budget went to health. Feldshers could be hired for far less than doctors. In fact, few doctors were available for employment in rural areas, and these mainly were circuit physicians who went from village to village seeing

patients on market days (Field 2, 1957). The circuit system was abolished in 1890, and physicians were appointed by the Zemstvo assemblies to practice in specified areas. Nevertheless, most peasants continued to seek their medical help from feldshers, who outnumbered physicians three to one (Ramer 1976, 216).

The zemstvo system brought the first real effort to give feldshers at least a partial medical education, but the schools were poorly equipped and staffed. In 1864 five such institutions opened, offering two years of training. By the end of the nineteenth century there were thirty-two schools, and the duration of training had increased to three years at some, four at others. Graduates of feldsher schools were called shkolnye, meaning "of schools," while those who learned their trade in the armed forces, continued to be called rotnye, meaning military. Although this education gave the feldshers some degree of professional autonomy previously lacking, it brought them no heightened status and certainly did not improve the quality of their equipment and surroundings. This was true not only of feldshers but of all medical workers including physicians.

Medical conditions and facilities in Russia were the poorest in Europe. The playwright Anton Chekhov, who as a young medical graduate worked briefly as a zemstvo physician, described a rural hospital as a "picture of filth and dirt, of drunken attendants who sleep in the same room with the patients, of the almost total lack of instruments, of resigned superstitious patients and of the absence of what the Russians call culture" (Field 1, 1957).

Chekhov noted that in a social sense feldshers were "neither fish nor fowl" and thus typified the largely ignored middle groups in nineteenth century Russia who had "left the people and not yet arrived as members of the intelligentsia" (Ramer, 1976, 217).

In this situation the feldshers found it difficult to win either respect or reward. "The work of the feldsher was exhausting, unrelieved by holidays, poorly paid and hazardous. Their standard of living was little better than the peasantry or urban working class. Their legal status as medical practitioners was poorly defined and the title of feldsher carried a social stigma" (Ramer 1976, 217).

An important barrier to an improved status for feldshers was the hostile attitude of Russian physicians of whom Chekhov is typical. Rather than regarding the mid-level practitioners as allies or even assistants, doctors looked on them as enemies, or at least a necessary evil eventually to be made extinct by the training of more physicians. It is interesting to observe that this still is the official, although very distant goal of the Soviet government today. Naturally, this antagonism was reciprocated by the feldshers, who in articles in the medical press charged the physicians with "arbitrariness, caste discrimination and even physical brutality" (Ramer 1976, 219).

Feldshers faced a further obstacle in their quest for advancement because of a conflict within their own ranks: the shkolnye feldshers with a formal education vs. the rotnye feldshers from the military. The shkolnye group professed a

superior attitude and barred the rotnye from their societies. The law substantiated this attitude by restricting the rotnye to hospital practice under the direct supervision of the physician. The rotnye, for their part, resented such limitations and emphasized their own practical skills, field experience and social proximity to their patients. Some shkolnye feldshers acknowledged the abilities of the rotnye and urged the creation of a standard examination for all, a view espoused in the journal Feldsher, established in 1891 by Dr. Bois Oks. Eventually training for all feldshers was standardized (Ramer 1976, 200).

After the Revolution of 1905, which failed to overthrow the Czar, the government increased its efforts to train much needed health providers. By 1915 there were sixty-five schools for training civilian feldshers and feldsher-midwives with a combined enrollment of nearly 9,000. Feldsher-midwives (feldsheristka-akusherka) are mid-level health practitioners, invariably female, qualified to be of service obstetrically as well as medically.

There were two reasons why the Zemstvos liked having feldsher-midwives, one practical and one that had the goal of improving health care in Russia. In the 1870's medical reformers had set up over twenty schools for training midwives, mainly with the goal of replacing the povitukhi (older peasant women without formal education who were experienced in delivering babies) who practiced in the countryside. The prevailing medical establishment doubted the competence of the povitukhi, although there was no proof that graduates of midwife schools were any

better.* Experience showed that a combined feldsher midwife tended to promote the obstetric practice of the female feldsher, making new inroads on the territory of the povitukhi. Although by 1905 there were 10,000 trained midwives, they were present at only two percent of rural births. Ten thousand was still very few for a population of 125 million, but an even greater problem was one of maldistribution (a common theme throughout this paper). Most graduates of midwife school preferred the city, where the standard of living was higher and there were more salaried positions.

The Zemstvos also preferred to combine the functions of feldsher and midwife because that meant they only had to hire one person to do two jobs. Feldshers often assisted at birth because they were often the only health care practitioners available to the peasants. The peasants often trusted feldshers more than midwives as birth attendants since they knew them from treating their other illnesses. The first combined course for training feldsher-midwives was given in 1879 in a school in Kishinev and eventually all feldshers whether male or female were given training in obstetrics and gynecology (Ramer 218-234, 1978).

In addition to the schools for civilian feldshers and feldsher-midwives, there were ten military feldsher schools,

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*There was one formal attempt to upgrade the skills of the povitukhi. In 1888 in Saratov Province a group was given a one month crash course in modern obstetrics with the idea that the participants would return to the countryside to practice (Ramer 1978, 231). This was quite similar to the philosophy behind the training of the barefoot doctor in modern China which will be discussed in the next chapter.

mainly in central Russia. The schools varied in curricula and admission requirements, but most gave three or four-year courses. Graduates who passed a state examination received a diploma and the title of feldsher

Unionization of workers, which began on a large scale in the twentieth century, also benefitted the feldshers. They and other lower rank hospital personnel were among the first to form unions at the very start of the century (Navarro 1977, 20). Physicians established their own organization, the All-Union of Medical Personnel, in 1905 (Field 1967, 28).[5]

With the start of the Revolutionary Period in 1917, feldshers and physicians found themselves deeply involved in the political struggle on opposite sides. The physicians generally supported Alexander Kerensky's provisional government.

> They were staunchly opposed to the Bolshevik leadership, whose proposals for widespread health reforms posed a threat to the autonomy and privileged livelihood enjoyed by the profession. Lenin's notion of medicine as a collective endeavor involving citizen participation in control and decision making was at sharp variance with the bourgeois concept of an individualistic, biological medical model (Pickard 1987, 166).

Physicians tended to hold "liberal" rather than "proletarian" views, while the Bolsheviks looked upon the doctors (except those who had made common cause with them) as "bourgeois"

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[5] Today all health workers in the Soviet Union are represented in one Union, the Union of Medical Workers. There are different sections for each type of health worker (Ryan 1978, 67).

class enemies (Field 1967, 28). Instead of the physicians, the Bolsheviks turned to the feldshers (who now numbered about 30,000) and the feldsher unions for support "because they were among the former exploited classes" (Field 1967, 29) and had begun to occupy a more favored position in society. Feldshers were urged to assume leadership in health affairs and to "cut the physicians down to size" (Field 1967, 29). The regime established one union for all health personnel, but initially physicians, pharmacists and veterinarians refused to join. Finally, in 1920, pharmacists and veterinarians joined, but physicians remained outside (Field 1957, 63). When membership in the union became a condition for employment in health posts, the physicians finally joined up.

When the Bolsheviks seized power, there were only 20,000 physicians for a population of 150 million, one for every 7,500. The inadequacy of health care was complicated by the outbreak of a typhus epidemic. In 1920 one in every twenty-five people had the disease, with five million deaths reported (Sidel, V. and R., 1983, 187-189). At the height of the epidemic, Lenin told the Seventh Congress of Soviets: "Either the lice defeat socialism or socialism defeats the lice" (Field 1967, 62).

The Bolsheviks were dedicated to guaranteeing medical service to all without charge. In order to train badly needed health care personnel quickly, they opened new medical schools. Initially Lenin granted preference for admission to children of working class or peasant background (Pickard 1987, 166). But

even in these recruiting efforts, emphasis was placed upon academic merit and examination results (Sidel, V. and R., 1983, 189).

During the medical expansion of the early Bolshevik era, attempts were made to diminish the role of the feldsher and elevate that of the physicians. "Feldsherism was considered second-class rural medicine and in trying to equalize care between rural and urban areas the Soviets planned that the feldsher was to be upgraded or replaced by physicians. No new feldsher schools were to be established, and younger feldshers were to be sent to medical schools to be trained as physicians" (Sidel, V. and R. 1968, 935). Four year technical midwife colleges with upgraded admission requirements were set up.

Medical education, facilities and personnel underwent a huge expansion during the industrialization period of 1928 to 1941. The number of medical students vastly increased, as did those being trained in middle-level health care schools, including feldshers, nurses, midwives and pharmacists. At the same time, the health care sector became more hierarchical, centralized and stratified. Physicians were regarded as far more important than feldshers and nurses. Nevertheless, the Soviets in effect abandoned their initial intention of eliminating feldshers; they simply performed too valuable a function in providing health care to areas and populations that would otherwise lack it. As will be shown, after World War II, the role of the feldsher became more specialized, and feldsher training became more uniform.

Role of the Feldsher

In urban and rural areas feldshers have developed very different roles. In cities, their role is complementary or subordinate to the physician (Storey 1972, 8). In rural areas, their role may be as a substitute or an alternative to the physician (Kenyon 1985, 26).

Recently the feldshers' role has diminished in urban areas though they still are important in the ambulance service, in industrial health centers and in schools. In rural areas feldshers play an important part in delivering health care; the smaller or more remote the location, the larger the role of the feldshers. Many of these places could not provide adequate health care without them.

The following sections discuss the location and the responsibilities and importance of the feldsher in cities and in rural areas.

The Feldsher in Urban Settings

1. Polyclinics and hospitals. In the Soviet Union, the polyclinic is the site of primary medical care as well as of outpatient specialized care. The feldshers may give first aid, perform minor surgery, give immunizations and maintain records. Their duties are somewhat similar to those of an American nurse

in an outpatient department, except for performing minor surgery.

Many of the feldshers in polyclinics are medical students part way through their training. They consider this experience, which twenty- five percent of them have had, as valuable preparatory work. They do not function as feldshers to earn money, since medical education is free and many medical students get stipends (Sidel, V.,1968, 935). The experience gained is often significant. "In hospitals under the direction of a doctor, a feldsher is allowed to open abscesses, remove foreign bodies, make plasters, perform stomach washouts, and so on." (Ferguson 1973, 1411).

2. Industrial health stations. These are located in factories, plants and other heavy industry installations. In many of these stations, the feldsher's role is crucial. In fact, the feldsher health post is the primary unit of industrial health care in the Soviet Union, with a responsibility "to provide initial medical care before the arrival of the physician in cases of sudden illness or injury, and to carry out preventive hygienic measures on industrial premises" (World Health Organization 1974, 31).

Patrick Storey lists some of the feldsher's specific tasks in industrial health stations:

a). Rendering emergency care in case of catastrophic illness or injury.

b). Getting the patient quickly and safely into the system of emergency care.

c). Organizing periodic medical examinations and referring patients to a medical specialist under the supervision of a physician.

d). Observing the industrial health program of a shop, monitoring adverse conditions, and if necessary preparing proposals to improve those conditions from a health standpoint.

e). Writing monthly reports about diseases or illnesses causing temporary incapacity for work.

f). Administering injections and other treatments which the patient is scheduled to receive on a recurrent basis.

It should be emphasized that in performing such duties, the feldsher is always responsible to a physician, usually at a nearby polyclinic; actual medical diagnosis and decisions are made by the doctor (Storey 1972, 10).

A good example of the scope and significance of work done by feldshers in industrial health stations is provided by a huge tractor factory in Uzbekistan. There twelve feldshers work and live in a medical facility. The health stations are open twenty-four hours a day. The feldshers are responsible for routine physical examinations, immunizations, periodic radiologic screenings and gynecological checkups. In addition, they are trained to provide stress counseling and what they refer to as sex therapy--actually, sex education. The feldshers also have the responsibility of sampling air, water and soil around the factory for possible toxic content (Kenyon 1985, 29).

3. Subway stations and other public areas. Health stations

in large Soviet cities are located in certain centers of activity where people congregate, including some subway stations. These are somewhat more sophisticated than simple first-aid stations. The feldsher here has two basic functions: to render appropriate "dovrachebnaya" care and, if necessary, to activate the medical care system. Dovrachebnaya, meaning predoctor, refers to the kind of care that is rendered while waiting for a physician to arrive.

The health station of the Komosmolskaya subway stop in Moscow is staffed by five feldshers. Its facilities include ample, clean quarters with bed space for one person, various first-aid equipment, and appropriate drugs. About 500 people visit the health station per month. Usually they want nothing more than an aspirin or to have a foreign body removed from an eye. Sometimes, however, the onset of a serious illness may be detected (Storey 1972, 9).

4. Ambulance service. Working on ambulances that provide emergency medical services probably is the most demanding and stressful and accordingly most prestigious position of all for the feldshers. In urban areas, the feldsher's major contribution is as an ambulance worker, where they function like members of the emergency medical service in the United States (Sidel, R. Interview, Fall, 1987).

The Soviet Union's emergency service, called the Skoraya Pomosch (First Aid, or literally, "Quick Help") dates from 1931 (Torrey 1971, 45) and is highly advanced with an unusual degree

of specialization. A citizen may dial 03 on any telephone for help. All calls go to a central switchboard where physicians decide whether to dispatch an ambulance, to have the patient treated at home by an emergency care physician, or to refer the patient to a local polyclinic. Russian hospitals do not have emergency rooms (Knaus 1981, 230), so for many patients the "Quick Help" call provides entry into the medical system.

Each ambulance carries a physician, a driver and at least one feldsher, specially trained for emergency functions (Storey 1972, 8). Seven types of specialized ambulances are in use, equipped specifically for cardiac, toxicological, psychiatric, pediatric, resuscitation-surgical, obstetric and traumatic emergencies (Kenyon 1985, 26). The coronary care ambulance carries a physician and two feldshers and is equipped for EKG diagnosis, cardiopulmonary resuscitation and direct-current defibrillation of the heart (Storey 1972, 8). The feldsher's work in the ambulance is under the supervision of the physician, whom they assist in carrying out emergency procedures. However, the feldshers also perform some procedures independently, including the use of breathing apparatus, administration of nitrous oxide, anesthesia, application of splints, dispensing drugs and preparing dressings (World Health Organization 1974, 35).

Victor Sidel has described a ride he took with a Soviet ambulance team consisting of one physician, two feldshers and the driver, as they answered a call: "Everyone knew his role

precisely. The physician was the unquestioned captain of the team...But the feldsher(s) acted with little or no instruction from the physician ...There appeared an easy comraderie among feldshers and physicians from which the driver was left out. Their discussion was on the case they had just seen, on the nature of the Soviet health service and on the relative merits of the various types of vodka" (Sidel, V. 1968, 936).

Work on the Skoraya appears to be a prized position. There is a great preponderance of young physicians and feldshers with an unmistakable esprit de corps concerning their work (Storey 1972, 9). Sixty percent of Skoraya Pomoshch ambulance feldshers are women, as compared to eighty to ninety percent of feldshers in all services. These figures are consistent with the proportions of women to men among Soviet physicians. Seventy percent of doctors are women although more than half of hospital administrators are men (Du Plessix Gray, 19 Feb. 1990, 58). Womens' equality is written into the Soviet constitution and many have gone into medicine. However most of the specialists are men (Du Plessix Gray, 19 Feb. 1990, 58). Ninety percent of women are in primary care, the lowest level of medical practice, and fewer still are in important policy making positions at the republic and All-Union level (Raffel 1984, 504). The large number of women operating at the primary level may reflect the low pay of the average ordinary doctor, around 250 rubles a month compared to the 450 or more earned by a skilled industrial worker (Du Plessix Gray, 19 Feb. 1990, 70).

5.Schools. Feldshers have a place in urban school systems. They assist physicians in carrying out preventive exams, and may also be called upon to provide first aid. School feldshers are supervised by physicians in the children's polyclinic that serves the particular school (World Health Organization 1974, 31).

6. "Sanitary-Epidemiological Stations." These are the Soviet health system's equivalent of America's environmental health units. Feldshers working there assist physicians in a variety of tasks, including inspection of food, water, housing, waste disposal, vermin extermination and communicable disease control (Roemer 1962, 384). They also assist sanitarians in assuring the effectiveness of measures instigated by the sanitation-epidemiological service in workshops, catering places and other establishments.

7. Rest homes and sanatoriums. In a sense, these serve as a bridge between the urban and rural, for patients come from both backgrounds. The rest homes are health resorts for workers and their families and are free or charge rates below cost. Patients stay for twenty-four days and have individualized programs of diet, exercise and sports. Special medical treatments may include mud baths, mineral applications and ultra-violet exposure. At a typical rest home on the Baltic Sea, besides monitoring medications and treatments, the resident feldsher acts as a social director, planning team sports events and other activities. In his book Inside Russian Medicine, Dr. William Knaus, who is critical of many aspects of the Soviet health care

system, writes favorably of the sanatoriums. He concludes: "Sanitorium treatment is one of the most desired services the Soviet medical care system provides. For twenty-four days each person receives individual attention, in itself a rare Soviet privilege" (251).

The increase in the number of physicians now working in urban areas in the Soviet Union has inevitably led to a contraction in the activities of feldshers, who are found less frequently than before in hospitals and polyclinics. However, they remain very much in use in industrial plants and especially in the ambulance service. In all cases they are not doctor substitutes, but rather extensions of the doctor. In a factory or a health station, a feldsher will tell an employee that he needs medical care, but it is always the physician at the polyclinic who is responsible for the patient. In all aspects of urban health activities, even in the emergency service, the feldsher is under the direct supervision of a physician. This is in direct contrast to their activities in rural areas.

The Feldsher in Rural Settings

According to the most recent estimates, the Soviet Union has 995,600 physicians or 374 per 100,000 population. This figure gives it the second highest rate for any developed country following Israel. It is estimated that nearly one-third of the world's physicians are in the U.S.S.R (Raffel 1984, 493).

Yet the Soviet Union faces the same problem as many other industrialized countries: a maldistribution of physicians resulting from their reluctance to work in rural areas. To combat this situation, the authorities assign most new physicians to rural areas for the first three years of their practice. Once there, they are encouraged to remain, through incentives like large apartments, generous retirement provisions, increased salaries and the right to purchase an automobile. Yet very few stay. Some succeed in avoiding rural service altogether, either through advanced training (available only to those with outstanding averages in medical school) or through using political connections to avoid rural work. One survey found that thirty percent of all interns fail to show up for rural assignments.

Partly because of the lack of physicians, feldshers in rural areas tend to develop more independent roles than their urban counterparts, and in some cases become substitute doctors. A survey in 1968 showed that in rural settlements feldshers occupied eight percent of the posts designated for sector general physicians, and 12.7 percent of the posts for sector pediatricians.

The feldsher's duties are spelled out in the "Regulations Concerning the Rights and Duties of the Feldsher", ratified by the Ministry of Health of the U.S.S.R. on June 6, 1946 and printed in translation in the U.S. government publication "The Soviet Feldsher as a Physician's Assistant." According to this

document, the feldsher's work at rural health stations includes "epidemic control measures; reduction of childhood morbidity and mortality; early case finding, observation and medical services for tuberculosis, malignant tumors and other diseases; provision of pre-doctor medical aid to adults and children and other therapeutic procedures prescribed by the doctor; sanitary and hygienic measures to improve the living and working conditions of the people engaged in farm production; and health education" (Sidel, V. and R., 1983, 201).

The feldsher's role in rural areas must be viewed against a background of the diminished hospital care available in the country-side as opposed to the city. Rural district hospitals have only between 35 and 50 beds. For advanced medical treatment it is necessary to go to the "rayon" hospitals, which have between 200 and 250 beds and also provide specialized care.

Particularly important in rural areas are the feldsher-midwife posts, usually located on the outskirts of medical districts and serving a population that ranges from 700 to 3,000. Feldsher-midwife posts are also found on state farms, mechanized lumbering centers and tractor repair centers. Sometimes these are almost the equivalent of a hospital in miniature. Midwives run an outpatient surgery for gynecological cases, monitor pregnant women and take care of infants up to one year of age. Following is a description of the conditions at a typical midwife post from the Los Angeles Times.

> The atmosphere of Natasha's cleanly swept three room post - cheery-looking even on a grey midwinter morning - is reminiscent of a rural American country doctor's office of 60 years ago.
>
> There is a freshly painted white medicine cabinet standing on the linoleum floor behind a desk. The cabinet contains bandages, a thermometer and a few simple instruments. A poster on the wall warns of the dangers of alcoholism.
>
> Outside, near the front door, an old fashioned iron-handled pump rises out of the snow, the post's only source of running water.
>
> But it is Natasha, wearing a white coat and a Russian medic's high domed cap who dominates the scene (Nelson 1988, 19).

In 1972 there were 89,718 feldsher-midwife posts, the most numerous of the health service units in the country (Ryan 1978, 72). Both feldshers and midwives work 6 1/2 hours a day and average from seven to ten outpatients daily (World Health Organization 1974, 40).

The extensive use of feldshers and midwives in rural areas has not been without its critics in the Soviet health community. The basic complaint is that feldshers in many regions are doing more than they have been trained to do. Under government regulations, feldshers are supposed to refer patients with anything more than minor complaints to the nearest polyclinic or hospital, and physicians are supposed to visit feldsher posts every two weeks. In actuality, this often is not done, because physicians are not available in sufficient strength, and because of their reluctance to practice in rural areas.

In the recent past, attention has also been drawn to the medical shortcomings of the feldshers themselves. A 1966 study

in Meditsinskaya Gazeta (Medical Gazette), the journal of the U.S.S.R. Ministry of Health and the Central Committee of the Union of Medical Workers, reported that feldshers had particular difficulty in recognizing diphtheria, dysentery and tuberculosis, and had also made errors in diagnosing cardiovascular disease. The study was based on a total population of 130,000 of whom 75.4 percent lived in areas served by feldsher-midwife posts (Ryan 1978, 75). The study concluded

> Partly responsible for all this is the lack of day-by-day control of the feldsher's work. In many instances errors are the result of carelessness and negligence...The main work of the medical personnel of the feldsher-midwife stations concerns prevention. In cases of serious illness it is the duty of the feldsher, after having diagnosed the disease and rendered first aid, to send the patient immediately to a specialist. But this rule is very often disregarded. Some instances give rise to great alarm (Sidel, V. 1968, 938).

Reports like these had the effect of bringing about policy changes in certain areas. In 1967 the Health Minister of Georgia declared: "We consider that the rural population should visit only a doctor for initial medical care." As a result, many feldsher-midwife posts were shut down in Georgia and replaced by ambulatories (clinics) staffed by doctors. The proportion of patients receiving initial medical care in Georgia rose to eighty percent (Ryan 1978, 76). A similar reorganization was ordered in the Ukraine.

Soviet authorities would like to believe that even where feldshers continue to substitute for physicians, the situation is

only temporary. Their official contention is stated in these words: "One of the chief sources of pride in the Soviet medical system is that every Soviet citizen, no matter where he lives, has access to a physician" (Knaus 1981, 257).

However, Soviet health-care planners are realistic enough to accept the fact that eliminating the feldsher as a doctor substitute in many rural areas will be a difficult task lasting many years if, indeed, it is ever fully accomplished. Lack of population density, smallness of village size, limited communication, adverse climactic conditions, and difficulty of retaining doctors in the backwoods all are stubborn problems that must be overcome.

Consequently, not all the Soviet Republics are following the example of Georgia and the Ukraine in attempting to replace feldshers with physicians. Instead, as an alternative, some are trying to upgrade the feldsher-midwife services by instituting courses to improve their clinical competence, and providing training in laboratory techniques - - a process that is less expensive and more practical in achieving medical services.

The Uzbekistan Republic in south central Asia, with a population of eight million, has set up new medical colleges aimed at improving the qualifications of mid-level medical workers and has also established seminars, conferences and ten-day courses for them at district medical centers. The Republic has adopted a deliberate policy of relying extensively on feldshers and midwives particularly in rural areas. The Republic

has thirty-one physicians and eighty-six mid-level medical personnel (i.e., feldshers and midwives) per 1,000 population.

Uzbekistan's former Health Minister, Dr. A. Khudaibergenov, in an article in World Health Forum in 1986, points out how the feldsher's activities in recent years have undergone expansion:

> Today (the feldsher's work) no longer consists merely of carrying out vaccinations, monitoring conditions of hygiene and providing health education, but also includes performing preventive examinations, maintaining a watch on the health of women and children and organizing health education courses; measures are also taken in connection with the observation and clinical treatment of the sick (Khudaibergenov 1986, 239).

In other words, the feldsher is alive and well in Uzbekistan.

Education and Status

Training for a feldsher is 2 1/2 years for those with eleven years of primary schooling and 3 1/2 years for those with eight years of primary schooling (Sidel, V., 1968, 64). In addition to standard medical courses, students also study political philosophy and are required to take physical education. All the teachers are physicians, not feldshers, and training emphasizes the theoretical rather than the practical. All graduates must pass a standard oral exam. Training is free and living accommodations are sometimes provided. The top five percent of the graduates may apply to medical school, while the rest may apply after two to three years of work. It is estimated that twenty to thirty percent of physicians in the Soviet Union were initially trained as feldshers (Kenyon 1986, 26).

Until Mikhail Gorbachev took power, training for a physician had been six years. In an attempt to improve medical care in the Soviet Union, training has been lengthened to seven years. At the end of seven years the physician will have to pass an examination not only on theory but on practical skills. "Not all of those who finish higher school will receive a physician's diploma. Those who cannot cope with the full program will receive a feldsher's diploma" (Current Digest of the Soviet Press 1987, 4). It is too soon to know how feldshers' training will be affected by the Gorbachev era. Perhaps higher standards

and a longer period of training will be required. The monthly journal Feldsher and Midwife celebrated its fiftieth anniversary in 1986, and feldshers are encouraged to attend conferences with continuing education being honored and rewarded.

The number of feldshers reported varies from a half million (Knaus 1981, 256) to one million (Kenyon 1985, 26) with a 1975 study estimating the number at 545,000 (Nelson 1988, 19). About 30,000 new feldshers enter the field each year and they make up twenty-two percent of the total number of middle medical workers. The rest are nurses, midwives, dental doctors, dental technicians and pharmacists (Raffel 1984, 505).

The status of the feldsher is high relative to other medical workers such as nurses* and lab personnel but low in relation to that of the physician. He or she holds the place of one who has graduated from a secondary vocational school and not from a university. Beginning salaries range from 70-90 percent of starting salaries of physicians which are less than 250 rubles a month. However, established rural feldshers often earn more than new physicians since their salary increases with experience. Feldshers in rural areas are given allotments to buy homes or apartments which provide an incentive to stay in the area (Kenyon 1985, 26). Most of the feldshers who work in the rural areas come from such areas themselves. One reason is that many of

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*Nurses' training is a year shorter than that of the feldsher in the USSR (Anthony-Tkach 1985, 45). Based on the book Inside Russian Medicine (1981) their functions sound more similar to that of a nurse's aide in this country.

these areas require only eight years of schooling rather than ten years which means rural graduates are eligible for middle medical worker schools but not medical institutes (Sidel, V. 1968, 986). However Frank Field also points out that since the feldshers are of peasant origin themselves they "are not too reluctant to return to the village with the added prestige of the educated person" (1967, 127).

This situation may have its advantage. "The feldsher understands the psychology of the rural population much better than the doctor fresh from the city, he can speak local dialects and is considered by the local people as one of their own." Finally, as already noted, many Soviet doctors resist working in rural areas because they would rather become specialists, which means studying and practicing in a large urban center with access to a specialty hospital. Ruth Sidel said in 1988 that the only physicians who would practice in rural areas in the Soviet Union would be doctors from the rural areas themselves. "You can't train somebody from Moscow and expect them to settle in Siberia" (Sidel, R., Interview). Perhaps the Soviets should try to encourage people from rural areas to become doctors instead of feldshers.

Although the feldsher will never hold the status of a physician, in rural areas the importance of his or her role is generally acknowledged and accepted. Meditsinskaya Gazeta has had praise for the feldsher. "Thousands of rural feldshers and midwives set magnificent examples of selfless work and of an

eager desire to improve medical services to the village population; they display creative initiative and extensive knowledge in the course of their work" (Sidel, V. 1968, 988).

Conclusion

The institution of feldsherism continues to have problems. Feldshers are not considered independent health care providers and do not report to senior feldshers but to physicians. This tends to lower their prestige and weaken their status. Even in rural areas where the feldsher may be the only health care provider for miles, technically he or she is still responsible to the district physician. They do not have their own organization, but are part of the Union of Medical Workers. This paper already has mentioned that their medical expertise has been questioned. Some feldshers would like to have doctors working with them. Tanya, a feldsher in Western Siberia, complained that she had no doctor to work with for over three years. "We did have a doctor for a few months but there wasn't enough for him to do in the winter and he didn't like any of the girls, so he went to stay with a friend in Moscow" (Knaus 1981, 258).

Not all feldshers are pleased with the amount of recognition they get. Victor Sidel quotes a feldsher who says, "There are large numbers of feldshers who have given many years of their life to their noble work - the care of the health of the people. In what way has this selfless toil been rewarded? We know that there exists in our country the title of Honored Physician. But there is no title Honored Feldsher" (Sidel, V. 1968, 987).

However, in the Uzbek Republic, evidence is growing that the

Soviet Union is slowly beginning to accept the permanent existence of the feldsher and is no longer treating feldsherism as second class rural medicine. A. Khudaibergergenov, the former Minister of Health of the Uzbek Soviet Socialist Republic, wrote in 1986, "Clearly, the volume of medical care below the physician level provided for the most part at feldsher/midwife posts is considerable" (Khudaibergenov 1986, 238). This republic has instituted a "Midwife's Day" and "Feldsher's Day" for the best workers, so maybe the title "honored feldsher" is not far off. "Large number of feldshers will almost certainly continue in practice as doctor surrogates for several decades to come" (Ryan 1978, 76).

According to an article that appeared in the Los Angeles Times on May 15, 1988, the role of the feldsher is alive and well. He or she is still a vital part of the emergency medical service, "an area where the Soviets have matched or even outdone the accomplishments of Western medicine," even though his or her role may be diminishing in other urban areas. However the majority of people in rural areas still use the feldsher as their point of entry into the health care system.

Judging from articles published in the journal Feldsher I Akusherka (Feldsher and Midwife) from the years 1985 to 1988, the feldsher's role is varied with an emphasis towards health education, although he continues active in treatment as well. Some titles are "The Role of the Feldsher in Fighting Drug Abuse", "Pathogenesis, Clinical Picture, Treatment, Epidemiology

and Prevention of AIDS," "Angina" and "Diet Therapy in Obesity." Topics that listed materials for giving health education talks included sex education for girls, advice for women in controlling drunkenness, and organization of an evening for the health of youth. Several articles were on the history of the feldsher and one celebrated the fiftieth anniversary of Feldsher I Akusherka.

There may be definite advantages to be gained if the Soviet Union accepts the existence of feldsherism, upgrades his or her training program and gives each feldsher the recognition he or she deserves. Being from rural areas, feldshers can speak the language of the people and understand their traditions and customs. It may not be realistic for the Soviets to expect that physicians will settle permanently in rural areas when such regions are still so underdeveloped and without the stimulation and amenities of cities. Finally the fact that the feldsher's role has lasted since the eighteenth century may in itself be a sign that it is appreciated in the population. As will be seen in the next two sections, other countries are studying the institution of the feldsher, learning from its good and bad points, and adapting it in their own versions of the middle medical worker.

Chapter IV

The Barefoot Doctor of China

The Chinese Health Care System Today

On the basis of size alone, China would need extraordinary methods to provide adequate health care to its people. Its population, 1,069,628,000 (World Almanac 1990, 699), is the world's largest, with 80 percent living in rural areas. Unfortunately, China is still very poor, with a per capita 1983 GNP that is only 1/30th that of the United States. Consequently, there are vast numbers of people who could benefit from medical care but insufficient wealth to support a large, sophisticated medical system (Sidel, V. and R. 1983, 210).

Impressive improvements have nevertheless been made since 1949 when Mao Zedong formally established the People's Republic of China. From that year to 1981, average life expectancy almost doubled[7], infant mortality declined sharply and malaria was all but wiped out. The barefoot doctors who were involved not only

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[7]In 1950, the average life expectancy was thirty-two years. By 1985 it had increased to sixty-nine years (Worden 1988, 90).

in primary medical care but in carrying out disease prevention policies and health education played a significant role in these developments.

Health care in China is more decentralized than in the Soviet Union with more planning and decision making occurring on the local level. The Ministry of Health in Beijing sets general guidelines to be carried out on the provincial level. Each provincial health department is in charge of the medical schools in its area and oversees its hospital system. Although the provincial authorities supervise medical schools and the hospital system in cities and rural counties, they do not directly manage local hospitals or health activities (Raffel 1984, 134). Unlike in the Soviet Union, health care is not free, with patients paying for their own primary care, sometimes with the aid of insurance. These economic aspects will be discussed later.

Health care on the local level in China is organized in a three tier system in both urban and rural areas. In urban areas, the first tier consists of paramedical personnel known as worker or red guard doctors. They are employed in factory and neighborhood Red Cross stations and deliver basic primary care. More serious cases are referred to the district hospital, and the most serious are referred to municipal hospitals. However, many government agencies and state enterprises bypass this system and send their employees directly to district or municipal hospitals (Hsiao 1984, 933).

In rural areas, the first tier is made up of barefoot

doctors who deliver primary care out of village medical centers. For more serious cases, patients are referred to the commune health center where there are assistant doctors, and then to the county hospitals which are staffed by senior doctors with degrees from five year medical schools (Worden 1988, 90). For millions of Chinese it is the barefoot doctor who provides basic health care.

The barefoot doctor or first tier, is the basis of primary health care in rural China. Unlike the feldsher of the Soviet Union, the barefoot doctor is a product of modern times. On June 26, 1965, Mao Zedong issued a directive which said, "In health and medical work, put the stress on rural areas" (Schram 1974, 233). It was after this date that the barefoot doctor was born and his training began.

Barefoot doctors come from the peasantry, serve the peasantry and to a varying extent remain part of the peasantry. They provide some basic medical treatment, but they do so without ceasing to perform productive agricultural work. The name "barefoot doctor" came into use because in the south peasants actually worked barefoot in the rice paddies (Sidel, V. 1972, 1293).

Health Care in China, 1949-1965: Before the Barefoot Doctor

Prior to Liberation (1949)

Prior to 1949, there were about 40,000 doctors of Western medicine to serve a population of approximately 540 million people. Preventive medicine was almost non-existent. Most deaths were due to infectious diseases complicated by malnutrition. Almost all the doctors were concentrated in large cities (Sidel, V. 1972, 1293). Peasants in the rural areas and the poor people of the cities relied on the practitioners of traditional Chinese medicine whose training and experience varied considerably.

Chinese traditional medicine, which is believed to have been codified in 2500 B.C. in Huanydi Neijing (The Yellow Emperor's Classic of Internal Medicine), differs from most other current systems of folk medicine. Like other systems, it makes use of empirical observation, questioning patients and physical examination. For therapy, it relies heavily on medicinal herbs. It also employs, however, such distinctively Chinese treatments as acupuncture and moxibustion (the application of heat to sites on the skin) (Sidel, V. and R. 1982, 20). In addition it has a unique philosophical basis, by which a balance is supposed to be maintained between the forces of yin and yang. Yin represents the feminine and negative principle, as of passivity, depth,

darkness, cold and wetness; while yang represents the masculine and positive principle, reflected in activity, height, light, heat and dryness. The concept is religious and metaphysical rather than medical, yet traditional Chinese medicine holds that yin and yang must be in balance within the human system if the body is to be in good health (Walton 1986, 1480).

Before 1949, no real attempt was made to systematically number the practitioners of traditional medicine in China. A 1930 study, made for the League of Nations, estimated that there were about 1.2 million traditional practitioners in China plus seven million "druggists" or dispensers of herbs. However, Ralph Croizier, who has examined the relationship between Chinese traditional and modern Western medicine in greater depth than any other scholar, expressed disbelief at these figures, noting that they "probably included every kind of old style healer and drug peddler" (1968, 37). When the Peking government did attempt an official listing in 1955, it registered 486,700 traditional style physicians. However, the actual number of those practicing this type of medicine was undoubtedly higher, for the government totals did not include thousands of part-time herbalists, bonesetters or acupuncturists.

Whatever their number, traditional doctors often ignored the mass of poor peasants in favor of the landed gentry or government officials who were better able to pay them. Dr. Joshua H. Horn, an English physician who worked in China from 1954 to 1969, reported that before the advent of the Communist regime,

traditional doctors "were closely linked with the landlords and officials," with many of them demanding transportation costs in addition to a fee when they visited a patient (Horn 1969, 124). As a result, peasants often went to other healers, including practitioners of magic and witchcraft. However, there always were a number of traditional doctors who pursued their calling conscientiously without excessive fees.

Dr. Horn, after fifteen years of practicing medicine in China, gives some insight into the training and effectiveness of the traditional practitioner:

> In many villages, a peasant with a flair for acupuncture or manipulation would gradually acquire a reputation and would be called in to treat the sick. He would often train his son who, in turn, would extend his skill by learning to recognize and infuse wild medicinal herbs. Although these village doctors were illiterate and although the medicine they practiced was crude and rudimentary, they did a certain amount of good and created the social climate for the subsequent training of true peasant doctors (Horn 1969, 124-125).

From Liberation to the Great Leap Forward (1949 - 1957)

On October 1, 1949, the Communist government, headed by Mao Zedong, assumed control of the entire country of China and proclaimed the establishment of the People's Republic of China in Peking. From the start, the new government made health care a high priority. The first National Health Congress was held in

Peking in August, 1950 (Sidel, V. and R. 1982, 28). Four national principles were laid out:

1. Medicine should serve the workers, peasants and soldiers.
2. Preventive medicine should take precedence over therapeutic medicine.
3. Chinese traditional medicine should be integrated with Western scientific medicine.
4. Health work should be combined with mass movements (Sidel, V. and R. 1982, 28).

The new government actually put these principles into action and, as a result, China has made impressive health gains. Before the liberation life expectancy at birth was estimated to be about thirty-five years while in 1981 it was 69.6 years for women and 67.0 years for men (Sidel, V. and R. 1982, 94). This change was largely due to a reduction in the infant mortality rate*, but there were other significant factors, like a decline in the incidence of infectious disease and a sharp drop in malnutrition. Infectious diseases have been replaced by cancer, stroke and heart disease as the leading causes of death, thereby bringing Chinese mortality tables into closer alignment with those of the West.

These health gains have been brought about in part by improvements in nutrition, sanitation and the general living standard, but a major role has been played by the changes in health and medical care (Sidel, V. and R. 1983, 210-211). To

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*In Shanghai, the infant mortality rate fell from 150 per 1,000 births in 1948 to 12.6 per 1,000 births today. In the same period malaria sufferers fell from 5.5 percent of the population to 0.3 percent (Sidel, V. and R. 1983, 210).

carry out the first principle, "Serve the workers, peasants and soldiers," Chairman Mao's regime ordered an immediate increase in the numbers of health personnel. The Soviet model of education was used, and Russian medical authorities were called in to provide technical advice and assistance. New medical schools and teaching hospitals were established, and some of the older institutions were moved from cities on the east coast further west, where the need was greater and facilities fewer. At many of the older institutions, class sizes were greatly expanded (Sidèl, V. and R. 1982, 28-29).

Emphasizing modern, Western-style medicine, higher medical education now consisted of a six year curriculum following the completion of twelve years of previous schooling. The China Medical College developed an eight-year curriculum, but concentrated on the training of teachers and researchers (Sidel, V. and R. 1982, 29). More than fifteen times as many doctors graduated between 1949 and 1964 as in the preceding twenty years (Horn 1969, 127). By 1957, Theodore Fox, the editor of Lancet, estimated that there were 70,000 physicians practicing modern methods, almost double the number in 1949 (1957, 936). By 1967, there was a total of 150,000 practicing physicians, a ratio of one doctor per 5,000 people, for the population of between 750 and 800 million (Sidel, V. 1972, 1293). In industrialized countries in 1967, the ratio was usually one doctor per 1,000 (Sidel, V. and R. 1982, 29). While still lagging behind the West, the Chinese had narrowed the gap considerably, since in

1949 the ratio had been one doctor per 25,000 people.

Unfortunately, most doctors in the 1950's remained concentrated in cities, despite efforts by the Ministry of Health to channel new manpower into the countryside. In 1963, the Ministry stationed most of the 25,000 graduating physicians in county hospitals and mining enterprises (Sidel, V. and R. 1973, 24). Nevertheless, the majority of health care workers remained in urban areas.

During the early fifties, Chinese health officials followed the Soviet model, not only in training large numbers of fully fledged doctors, but in creating a vastly enlarged corps of mid-level medical workers, including assistant doctors (comparable to the Soviet feldsher), nurses, midwives, pharmacists, technicians and sanitarians. Most of these middle medical workers had two or three years technical training after nine years of general schooling (Sidel, V. and R. 1972, 1293). By 1967, there were approximately 172,000 assistant doctors, 186,000 nurses, 42,000 midwives and 100,000 pharmacists, technicians and sanitarians. These newly trained mid-level personnel, like physicians, were concentrated in urban areas.

In addition, lay people in the community were mobilized to perform many health-related tasks themselves, accomplishing together what they could not do individually. One of the best known of these campaigns, initiated in 1952, was aimed at eliminating the "four pests": flies, mosquitos, rats and grain-eating sparrows (Rosenthal 1987, 79). When it became apparent,

within a few years, that the destruction of sparrows was having unwanted ecological effects, lice, cockroaches and bedbugs were substituted for the birds as targets of the "Patriotic Health Campaign" organized by the government.

The regime also encouraged people to build sanitation facilities and to keep their neighborhoods clean. Campaigns against specific diseases and opium use were also mounted. One particularly noteworthy drive was launched in December, 1955 against schistosomiasis, a helmetic disease contracted by working barefoot in contaminated water. Snails are a reservoir for the worms, so that peasants were organized to fight against snails. They were given extensive information about the disease through lectures, films, posters and radio programs. Special health stations were set up in infested areas to co-ordinate and direct eradication efforts (Public Health in the People's Republic of China 1986, 33). Voluntary labor was called in to join with the peasants, including students, teachers, office workers and soldiers. "They drained the rivers and ditches, buried the banks of the river and smoothed down the buried dirt" (Sidel, V. and R. 1983, 224). As a result, by 1985 the disease had been totally eradicated in Shanghai and Guangdong and was almost completely eliminated in all other areas of infestation (Public Health in the People's Republic of China 1986, 34).

Although the mass campaigns against certain disease carriers were very successful, other high-priority efforts of the Communist government moved much more slowly. Among these was an

effort to integrate Chinese traditional medicine known as Chung-i with Western scientific medicine, known as Hsi-i (Quinn 1973, 8-9). Chairman Mao laid down as one of the four national principles at the National Health Congress in 1950 that "Chinese traditional medicine should be integrated with Western scientific medicine." This effort involved three main goals:

> 1. To make full use of those elements of Chinese medicine that had been found effective. Acupuncture, for instance, was one of the basic tools of Chung-i and its usefulness was well-documented. The new health administrators had no intention of abandoning it.
>
> 2. To provide greater acceptance of Western techniques in rural areas. The peasantry for generations had been accustomed to traditional practices, and it was felt that Western techniques must be introduced gradually and side-by-side with these older methods if they were to be accepted at all.
>
> 3. To efficiently employ the large number of practitioners of traditional medicine. With China's shortage of medical health personnel, obviously there was a need to keep the Chung-i doctors at work along with those more attuned to modern methods (Sidel, V. and R. 1982, 32).

In November, 1958, for the first time, a class of modern Chinese doctors followed the newly instituted modern curriculum by also studying Chinese traditional medicine at the Peking Chinese Medical Research Institute. Ralph Croizier, described the purpose of the training:

> The objective is a new type of doctor, versed in both Chinese and Western medicine, and one who has acquired Communist consciousness under the immediate leadership of Party committees...In other words, a new type of doctor was wanted--not just Red and expert, but Red, Chinese and expert (Crozier 1968, 185).

The kind of doctor Croizier is describing clearly embodies political virtues as well as medical expertise; he or she is a symbol of the new China, reflecting a willingness to utilize the scientific advances of the West, yet still taking pride in indigenous Chinese technical methods and cultural values.

In 1959, the Chinese Medical Association for the first time agreed to include traditional doctors in its membership; 3,000 of them enrolled. Nevertheless, the integration efforts ran into many problems (Croizier reviews them extensively in his Traditional Medicine in Modern China). Basically, both sides--the traditional Chung-i doctors and the doctors trained in Western medicine--resented the integration campaign. The Western-style doctors resented Chung-i because of its practitioners' inability to explain its theoretical framework (such as the "balance" between yin and yang) in scientific terms. They also regard some of the traditional therapeutic methods as useless. Some of the Western-style doctors dropped out of classes in traditional medicine whenever possible; they also ignored traditional doctors on the staff of hospitals, or turned hopeless cases over to them. Traditional doctors, for their part, remained unconvinced in many cases of the superiority of modern Western methods over what they regard as the tried and true practices of Chung-i (Rosenthal 1987,40).

One result of this mutual resentment is that today there are two types of medical schools in China, the Western and the traditional, as well as two types of hospitals offering either

modern scientific or Chung-i treatment. Patients are offered their choice.

From "The Great Leap Forward" (1958-1960) to the Cultural Revolution (1965)

In 1958, China launched its second five-year plan, designed to accelerate industrial and agricultural development. Known as "The Great Leap Forward", its objective was to utilize the country's vast manpower to achieve economic improvement without foreign help. Cooperatives were merged into people's communes, industry was spread out and all agricultural resources were mobilized (Committee of Concerned Asian Scholars 1972, 411).

Both industrially and agriculturally, the Great Leap Forward was a failure, leading to extensive crop failures, and was abandoned after a little over two years. However, in the health field it achieved a number of positive results. It brought an effort to improve both treatment and prevention of disease in rural areas. The Great Leap Forward led to the creation of people's communes, large groupings of agricultural workers, and these organizations were in the forefront of the new efforts at disease control. Many of them established medical clinics and, equally important, launched the first tentative attempts at disease prevention procedures (Horn 1969, 127). The campaign against the "four pests", begun four years earlier, was accelerated and expanded.

Big city doctors trained in Western medicine continued to be reluctant to settle in the countryside; it was not until the mid-1960's that the Ministry of Health began to assign some of them there on a regular basis. However, determined to carry the Great Leap Forward into rural health care, the Ministry sent in mobile teams of urban doctors, nurses and assistants starting in the late 1950's (Committee of Concerned Asian Scholars 1972, 238).

While these roving medical squads seldom treated patients themselves, they performed two valuable functions. They guided and instructed local practitioners in disease prevention work. In addition, they gave training for six months or a year to indigenous health workers, including classroom instruction and clinical practice. Most of the health care in rural areas continued to be provided by traditional local medical workers, some of whom still helped in the fields, but at least they had the benefit of special instruction and exposure to new techniques.

They also had, at least by implication, a kind of endorsement from the Central Ministry of Health, which had sent the urban doctors in to train them. The urban doctors, once their six months or year was up, returned to the cities, leaving the rural medical workers, with their added instruction and training, to cope with local health problems. It was these local workers, trained under the Great Leap Forward, who were to develop into the "barefoot doctors" who have played such a significant role in China's recent health history. However, these

"peasant doctors", as Joshua Horn described them, did not have an easy time. The patients on the whole welcomed them, but some of Mao's opponents within the regime and the urban medical establishments felt that the kind of treatment and therapy they offered were inadequate following the Great Leap Forward. As a result, from about 1962 to 1965 the policy of training peasant health workers was suspended and emphasis shifted back to educating doctors in modern medicine in the cities.

Political factors are never far beneath the surface in China. The reason for the turnaround in medical education and emphasis was that economic conditions had improved (grain, cotton and agricultural production rose in the early 1960's), and social conditions were relatively stable. Witold Rodzinski, a Polish scholar of modern China, labeled the 1962-1965 period "Respite Before the Storm" (1988, 90-91).

When the country began its recovery following the Great Leap Forward, the effort to educate peasant doctors weakened and their actual numbers began to decline. Figures for the country as a whole are hard to come by, but in the Shanghai area alone the number of peasant doctors dropped from 3,900 to 300 in the four years from 1961 to 1965 (Risse 1973, 131). Furthermore, a report was issued condemning the work of health workers in rural communes and urging them to go back to their agricultural tasks. A few years later, during the Cultural Revolution, this same report was denounced as "revisionist" (Sidel V. and R. 1973, 79).

The Barefoot Doctor Reaches Its Peak: The Cultural Revolution, 1966-1976

> China, like many other countries, needs many more doctors and needs them quickly. China like all other countries, needs doctors who are completely devoted to the welfare of the ordinary people, who understand them, who are not separated from them by barriers of cash or class and who can serve both their immediate and long-term needs. (Horn 1969, 135).

Introduction and Definition

The Cultural Revolution provided China with its greatest political upheaval and unrest since the Communists gained control of the country in 1949. By no coincidence, it also saw the rise of barefoot doctors to their position of greatest importance and influence. On June 26, 1965, Mao Zedong blasted the Ministry of Public Health (Wei-sheng-pu) which had been shaping health policy from 1949 to 1965.

> Tell the Ministry of Public Health that it only works for fifteen per cent of the total population of the country and that this fifteen per cent is mainly composed of gentlemen, while the broad masses of the peasants do not get any medical treatment. First they don't have any doctors; second they don't have any medicine. The Ministry of Public Health is not a Ministry of Public Health for the people, so why not change its name to the Ministry of Urban Health, the Ministry of Gentlemen's Health, or even to Ministry of Urban Gentlemen's Health?

> Medical education should be reformed. There's no need to read so many books. How many years did Hua T'o spend at college? How many years education did Li Shih-chen of the Ming dynasty receive? In medical education there is no need to accept only higher middle school graduates or lower middle school graduates. It will be enough to give three years to graduates from higher primary schools. They would then study and raise their standards mainly through practice. If this kind of doctor is sent down to the countryside, even if they haven't much talent, they would be better than quacks and witch doctors and the villages would be better able to afford to keep them. The more books one reads the more stupid one gets. The methods of medical examination and treatment used by hospitals nowadays are not at all appropriate for the countryside, and the way doctors are trained is only for the benefit of the cities. And yet in China over 500 million of our population are peasants...
>
> In medical and health work put the emphasis on the countryside!

However sincere Mao may have been in his desire to bring health care to as wide a populace as possible, his program inevitably had its political aspects. Stressing health care in rural areas was part of Mao's broader socialist policy in bringing medical care to as many of the common people as possible. There were those who continued to prefer that doctors be concentrated in the cities, in effect they maintained "expensive specialized facilities for an urban elite" (Risse 1973, 43). Among the proponents of favoring the cities over the countryside was Liu Shao-chi, slated to be Mao's successor as chairman of the People's Republic of China.

During the Cultural Revolution itself, the urban medical

establishment came into disrepute, with young students and their leaders (known as "Red Guards") denouncing some Western-style physicians as intellectuals, "revisionists" and part of the bourgeoisie (Gittings 1989, 93). So during the decade of the Cultural Revolution, which saw the triumph of Mao over Liu, China's medical showpiece became not the skilled medical specialist of the cities, but the village-based "barefoot doctor" who served the peasantry.

The term "Barefoot Doctor" first appeared in print in September, 1968 in an article in Hung Ch'i (Red Flag), the main theoretical journal of the Chinese Communist party. "Barefoot doctors," the article said, "is an affectionate title that the poor and lower-middle peasants on the outskirts of Shanghai have given to health workers who spend part of their time farming, and part in medical work" (Risse 1973, 132). Obviously the term had been in use for some time before it was picked up by the magazine; in fact, by the time the article appeared there were approximately 4,500 barefoot doctors already functioning in the Shanghai area. They had begun operating there around 1965 when the Ministry of Health resumed sending mobile medical teams into the countryside. Unlike the roving squads of the late 1950s, these teams actually delivered some medical services themselves, but they also gave groups of peasants medical training, so they could provide treatment for their neighbors even while continuing to do farm work themselves.

Both men and women were included among these barefoot

doctors, with their over-all proportion approximately equal (Widmeyer 1984, 66). Like other commune members, the barefoot doctors were paid on the basis of work-points, and their income was the same as or slightly higher than that of other commune workers. Since they didn't wear shoes when working in the rice paddies, the peasants started calling them "barefoot doctors" (Wen 1974, 77). After the article in Hung Ch'i was published, the Shanghai model for barefoot doctors was implemented nationally, aided considerably by Mao Zedong's endorsement.

There is a problem translating "barefoot doctors" into English, the Chinese term being chijiao yisheng. Victor and Ruth Sidel argue that it is dangerous to equate yisheng with doctor, although that is what the term literally means (1973, 80). They point out that Chinese health officials do not equate the chijiao yisheng with regularly trained doctors, and that patients usually refer to them not as yisheng but as tongzhi, comrade, the common form of address for everybody in China. The Sidels also note that every barefoot doctor they came across in China in 1971 and 1972 was wearing shoes. They report this definition given by an unnamed official: "A barefoot doctor is a peasant who has had basic medical training and gives treatment without leaving productive work. He gets the name because in the south peasants work barefooted in rice paddies" (1973, 80).

The Sidels feel that a more appropriate term would be "peasant doctor" or "peasant health worker," which is the term Joshua Horn first used in describing their activities. Dr.

Bernard Berelson, a former president of the World Population Council, wonders whether there would be so much interest in barefoot doctors if they had been called ANMs--auxiliary nurse midwives--the term used for a somewhat similar low or mid-level worker in India's health system (National Institute of Health, Public Health Service 1980, 43). Despite such opinions, the Chinese peasants continue to refer to the health workers among them as barefoot doctors, as do the majority of Western observers and writers.

Education/ Training/ Selection of the Barefoot Doctor

Mao Zedong's order in 1965 to "put the stress on rural areas" in health matters helped bring the barefoot doctor into being, but it did not spell out the methods of his development. As a result, for several years after 1965, the selection, training and education of the barefoot doctor was somewhat haphazard, varying from commune to commune, year to year, barefoot doctor to barefoot doctor. Very little was standardized. On the one hand, the result was a lack of uniformity, which meant that medical care in rural areas varied widely from place to place. On the other hand, training could be tailored to meet a commune's need, including its specific economic situation.

The most common mechanism of education was through the mobile teams of urban doctors and other health personnel sent

into the countryside to carry out Mao's edict to bring health care to rural areas. Some went as volunteers; Joshua Horn describes a team of 107 being organized at his hospital in Peking in 1965 to travel to northern Hopei, several hundred miles away (Horn 1969, 129). But other urban medical workers were assigned to stations in the countryside. There, they trained barefoot doctors for varying periods, ranging from three months to one year.

Since bringing medical help to the countryside became a patriotic as well as a practical act, the People's Liberation Army joined in enthusiastically, dispatching its own physicians and other personnel. By June, 1969 the Army had sent more than 4,000 medical teams and 30,000 personnel to the countryside. Many of its own medical trainees remained in rural areas to work with the barefoot doctors. In 1970, no fewer than 6,000 military medical teams were active in the Chinese countryside (Quinn 1973, 151).

Once again political ideology played a part in determining health policies. "The intent (of the mobile teams) was not merely to impart medical knowledge but to evolve a new kind of socialist minded rural health worker who would retain the closest links with the peasants and be content to stay permanently in the countryside" (Horn, 1969, 135).

In 1978, China's Ministry of Health reported that over three years approximately ten to fifteen percent of all medical doctors had worked for varying periods in rural areas as members of

mobile medical teams. They had been assisted by approximately 140,000 medical professionals. One specific instance cited was of Beijing Maternity Hospital, where eleven percent of the medical and nursing staff traveled to a rural area fifty miles north of the city to train barefoot doctors in family planning and child health (National Institute of Health, Public Service 1980, 54-55).

By 1970, some of the communes in rural areas had begun a policy of sending their own barefoot doctors to the nearest county or urban hospital to undergo further training by the physicians there. In such cases the communes themselves selected the barefoot doctor who was to be sent for training and paid his expenses (Risse 1973, 136). Training also was sometimes given by more experienced barefoot doctors. Usually these senior barefoot doctors were those who had begun to practice during the Great Leap Forward, then were forced to cut back or terminate their services in the early 1960s, and now had come back into favor. Thus there were four methods of training barefoot doctors in the years of the Cultural Revolution: by mobile medical teams from urban hospitals, by army medical teams, by physicians at urban hospitals to which the barefoot doctors were sent, and occasionally by other barefoot doctors (Hsu 1974, 124).

Initially barefoot doctors studied from three to six months, although some studied up to one year and some as little as one month. A survey of 751 brigade barefoot doctors in Shanghai County in 1980 found that fifty-one percent of barefoot doctors

trained from three to six months, twenty-nine percent trained six to twelve months, twelve percent more than one year and eight percent less than three months (You Long 1982, 59). The barefoot doctors studied anatomy and physiology, bacteriology, pathology and environmental sanitization, epidemiology, clinical medicine, pharmacology, elements of traditional Chinese medicine, family planning and health care of pregnant women (National Institute of Health, Public Health Service 1980, 55).

In all of these areas, training was on a beginning rather than an advanced level. In the laboratories, the students were permitted to dissect pigs, but not human cadavers. The skills they developed in clinical medicine were simple: how to use a stethoscope, measure blood pressure, administer injections, take a medical history and diagnose the most common diseases. They learned how to use forty or fifty drugs and some herbal medicines and were taught forty or fifty acupuncture points out of a possible 300 to 400. They received sufficient training in bacteriology and pathology to allow them to identify germs in contaminated water. Some theory was taught, but the students did not understand much of it and concentrated on practical aspects of their work (Gu, Personal Communication).

The barefoot doctor's training did not necessarily end after his initial three to six months training. Supervision usually continued when they started actual work at their commune with physicians from county hospitals or more advanced barefoot doctors overseeing their performance. Dr. Hsu Chia-yu, deputy

chief of internal medicine at Juichin Hospital in Shanghai, for example, described how he lived with a barefoot doctor and his family, even sharing a pillow with them. Before going to sleep he and the barefoot doctor would discuss the day's cases (Sidel 1973, 85). At the Chiangchen Commune, Chuansha County, Shanghai, the commune's barefoot doctors usually spent two days a month on "collective exchange of experience" (Chinese Medical Journal 1975, 162). At the Four Seas Clinic in Shanghai which served 15,000 peasants, the barefoot doctors had three periods of full-time instruction at yearly intervals. During the second period, they studied all diseases of a particular organ system, not just the common ones, and also visited Beijing hospitals to see more advanced techniques (Horn 1969, 139). Other writers told of barefoot doctors who traveled twice monthly to their commune hospitals for training in Western medicine and once monthly for training in herbal medicine. In addition, an occasional one day training course was given on such special subjects as setting fractures, treating drinking water, providing inoculations and treating snakebites (National Institute of Health, Public Health Service 1980, 50).

Since the middle 1970s, more advanced courses have been offered in such areas as family planning, acupuncture or herbal medicine. Advanced training is more likely to be provided in county or provincial hospitals than initial training, which is usually provided in commune hospitals.

Essentially, three models of barefoot doctor training

developed concurrently during the cultural revolution, and they have continued, with some modifications, into the present (Rosenthal 1987, 10-12). Model 1 provides barefoot doctors with a minimal level of training, one to three months. This is almost entirely practical training, supervised by a physician. When the brief course is completed, the barefoot doctors are entrusted with only the simplest tasks: giving vaccinations, treating common ailments, offering health education and family planning advice. Usually this model is found where more advanced health facilities are within reach and referrals can be made to commune hospitals or other institutions.

Under Model 2, the barefoot doctors receive more training and are more involved in patient care at the commune hospital level. Although the length of training seldom exceeds three months, the instruction is more intense than in Model 1, with the supervising physician emphasizing the areas of surgery and internal medicine. The Model 2 barefoot doctor is sometimes asked to perform minor surgery at the commune hospital.

Model 3 provides the most sophisticated and advanced training for the barefoot doctor. He or she receives the preliminary three month course of model two, sometimes expanded to six months. Following this comes a rigorous training period at the district hospital lasting from 2 1/2 to 3 years. A barefoot doctor with Model 3 training can function largely on his or her own, treating uncomplicated illnesses, performing surgery and functioning successfully in the areas of internal medicine,

dermatology and emergency medical care. He or she can also supervise health aides who have received two to three months of training, primarily in first aid and sanitation work (1987, 10-12)*. Model 3 doctors are expected to continue taking follow-up in-service training at the nearest large hospital one day a week.

Barefoot doctors are trained in elements of both Western and Chinese medicine. Paul Picowicz, an authority on Chinese medical history, observes that China is one of the few third world countries that has not abandoned traditional medicine in favor of "all-out Westernization" (1973, 138). It is unclear what percentage of traditional versus Western medicine was actually used by the barefoot doctor, but many accounts suggest that traditional medicine is more common, with a heavy emphasis on the use of local herbs and on acupuncture. This is more economical for the commune and it encourages local self-reliance, which was a goal of the Cultural Revolution.

Robert Hsu and Ralph Crozier note that the barefoot doctors were encouraged to grow as many of their own herbs as possible and experiment with them. This made good economic sense since the herbs could be grown right at the commune which could then sell the surplus (Hsu 1974, 24). However, this may have led to the dangerous use of some herbs since there was no way to establish their safety or effectiveness (Hsu 1974, 125-126).

In the 1970s instruction manuals for barefoot doctors began

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* The authors did not provide any estimates for the number of communes that have used the three models.

to appear. Apparently they existed in several versions. According to Paul Picowicz, the Instruction Manual for Barefoot Doctors was published in June, 1970 by the People's Medicine Publisher, under the auspices of the Ministry of Health in Beijing and distributed by the New China Book Company, a state agency. The first edition, with 591 pages, had a print run of 500,000 and cost one yuan (forty cents).

After several laudatory chapters about the barefoot doctor and his importance, the manual discusses prevention and treatment of various common diseases, outlines methods of pest control and elimination, and offers an extensive catalogue of herbal medicines--the largest section of the book. Diagrams and charts illustrate the book, and sample case histories are given (Risse 1973, 140-143).

About the same time the Hunan People's Publishers published Barefoot Doctor Handbook (Chijiao Yisheng Shou-tse) in Hunan Province in the south under the supervision of the Hunan Chinese Medical and Pharmaceutical Institute Revolutionary Committee. This Handbook consists of seven broad chapters: Recognition of the Human Body, Common Sense of Hygiene, Some Knowledge of Diagnosis, Some Knowledge of Treatment, Birth Control, Diagnosis and Treatment of Common Diseases, Traditional and Herb Medicines. Each chapter has many subdivisions, in which specific procedures are recommended[10].

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[10] A complete listing of the Table of Contents of the Handbook may be found in Medicine and Public Health in the People's Republic of China. The book also contains a "Standard

Such handbooks found an eager audience. According to the China Medical Journal, official publication of the Chinese Medical Association, sales of the earliest published printed materials for barefoot doctors reached 1,120,000 copies. Dr. David Eisenberg, who has visited China intermittently from 1977 to 1985, reports one example of its use during the Cultural Revolution era: "After being chosen the local 'barefoot doctor' in the mountains of northwest China, the eighteen-year-old Sun Li-zhe was given a copy of the Barefoot Doctor's Manual, a few needles, and a few herbs; so armed, he was expected to deliver primary medical care to the masses." (Eisenberg 1985, 162). Sun Li-zhe turned out to be an extraordinarily apt pupil. He read several advanced medical textbooks on his own and "with the equivalent of only a high school education and three months of formal training" was able to perform more than 100 successful abdominal operations on his own. (Eisenberg 1985, 163).

The barefoot doctors were encouraged to keep up with developments in their field and, perhaps to feel a greater sense of professionalism, with the publication The Barefoot Doctors Journal, which the government-backed People's Medicine Publisher began putting out in 1972. In 1981, with the Cultural Revolution over, the publishing house decided to rename the publication Rural Medical Sciences, perhaps suggesting a broader and

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List of Items Included in a Barefoot Doctor's Bag," including many pills, tablets and ampules, herb medicines, acupuncture and hypodermic needles, syringes, bandages and thermometers (Quinn 1973, 169-171).

somewhat higher level of prestige. Rural Medical Sciences quickly attained a circulation of "several hundred thousand," the highest in its history (Raifeng 1984, 68, 151).

During the Cultural Revolution era, the development of the barefoot doctor had ideological as well as medical significance. Being a barefoot doctor was a symbol of socialist commitment. The new health workers received political training along with their health instruction. According to the Chinese Medical Journal, "to start with, (the barefoot doctors) study the works of Marx, Lenin and Chairman Mao, and are given political and ideological education to prepare them for wholehearted service to the people." The barefoot doctors thus were taught to regard themselves not only as providers of health care to their neighbors but as exemplars of the Communist system that was creating the new China.

As part of this ideological campaign the barefoot doctors were given three articles by Chairman Mao to read: "Serve the People," "In Memory of Norman Bethune[11]" and "The Foolish Old Man Who Removed the Mountains." At the end of their indoctrination course, "every trainee expressed his wish to become a barefoot doctor wholeheartedly serving the poor and lower-middle peasant." (Horn 1968, 577). According to an article in China's Medicine, after two years of practice all barefoot

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[11] Norman Bethune, (1890-1939) a Canadian surgeon, became a national hero of China because of his medical service there during their war with Japan in 1938. He was medical chief of the Chinese Communist Army, serving as battlefield surgeon and organized hospitals in the field.

doctors could prescribe a hundred different medicines and could treat such illnesses as measles, pneumonia and pleurisy. "Some of them," the article went on, "have shown greater ability in practical work than some of the doctors in the commune clinic, who are graduates of medical schools but lack practical experience." I have never seen similar claims elsewhere about the barefoot doctors' powers. It should be noted that China's Medicine was a journalistic proponent of the Cultural Revolution set up in January, 1967 to replace the respectable Chinese Medical Journal. China's Medicine later ceased publication, and Chinese Medical Journal reappeared in 1973. (Sidel, V. and R. 1973, 37).

Barefoot doctors were selected by their neighbors and fellow brigade members on the basis of general integrity, high ideological standards and a sworn interest in health care. They had to have a desire to "serve the people and care for others" (Contreras 1979, 32). The amount of previous education was not considered an important factor, although most had at least six years of schooling. Their range of previous education was from two years of primary school to the completion of middle school, about eight years (Hsu 1974, 125).

Class background was also a criterion for selection, and preference was given to children of poor and lower middle class parents. While the majority of barefoot doctors were young production brigade members of poor and lower middle peasant origin, some were young intellectuals (middle school graduates)

sent from the cities to the countryside to work among the peasants. According to Dr. Qin Gu, a Chinese doctor of traditional medicine who studied in the period immediately following the Cultural Revolution, these "young intellectuals" made up a very large proportion of the barefoot doctors.

One of the most spectacular examples of the ideological campaign built up around the barefoot doctor was a feature film called Spring Shoots produced in 1976. Its announced design was to reflect "the maturing of barefoot doctors and new socialist sprouts in the thick of the struggle between the proletariat and the bourgeoisie." The heroine was Chun-miao, a young woman peasant who seeks to become a barefoot doctor but whose efforts to learn are "obstructed by the bourgeoisie." She is told scornfully that "using an injection needle is not the same as wielding a hoe." Despite a plot to frame her by administering poison to a poor peasant for whom she is caring, she triumphs over her foes and assumes her rightful place in the commune hospital (Gittings 1989, 92).

Shortly after this film appeared, a political upheaval took place and the Cultural Revolution ended. The movie, consequently, was denounced as slanderous and an affront to true Communist leadership. A play called Loyal Hearts, staged in 1978, depicted sympathetically an old doctor who had been falsely accused during the Cultural Revolution of being a "bourgeois specialist" when all he had really wanted to do was conduct research into heart disease. (Gittings 1989, 92).

With the end of the Cultural Revolution barefoot doctors lost some of their glamor as well as the almost superhuman qualities with which they had sometimes been endowed by the regime's propagandists. But so extensively had they proliferated, so intensively had they been trained, and so effectively had they performed, that they carried over into the succeeding period and became an integral part of the Chinese health system.

Changes Since the Cultural Revolution: "Ideals Yield To Certification Exams," 1976 - Present

Mao Zedong died on September 9, 1976. With his death the Cultural Revolution may be said to have ended. Deng Xiaoping eventually became the most powerful leader in China, holding the position of Central Military Commissioner of the Ruling Communist Party. Deng did not win without a struggle; he had to overcome the opposition of the so-called "Gang of Four," an ultra-leftist faction led by Mao's wife Jiang Quing. The "Gang," which had encouraged the student "Red Guards" at the peak of the Cultural Revolution, was arrested in October, 1976, a few weeks after Mao's death. They were subsequently tried and sentenced to long prison terms.

According to Witold Rodzinski, the area most adversely affected in China by the Cultural Revolution was education, with the intelligentsia characterized as "enemies of the people" (1988, 222). The "Gang of Four" had branded intellectuals as "the stinking number nine," the ninth category of enemies after landlords, rich peasants, counter-revolutionaries, bad elements, rightists, renegades, enemy agents and capitalist roaders (Rodzinski 1988, 222).

Standards in higher education, including medical instruction, fell. In the first outburst of the Cultural Revolution, many medical schools were actually shut down. The

entire medical establishment came under attack for being alienated from the masses (Risse 1973, 42). Medical schools were perceived as being instruments of the old-style establishment, totally indifferent to the needs of the peasants and workers (Sidel, V. and R. 1973, 114). Richard P. Suttmeier cites a poem composed by revolutionary students at the China Medical College, which had an eight-year course of study:

> These eight years in the old China Medical College--
> The havoc they wrought!
> In three years, no medicine did we glean;
> In five years, no patients were seen;
> A full eight years, and no contact with workers and peasants brought (Quinn 1973, 1984).

In 1969 medical schools began to resume admission of new students, but on a somewhat different basis than previously. The educational process was speeded up, with many of the students graduated within two-and-a-half or three years. The emphasis was placed on practice rather than theory; there were no grades or competitive placement. In selecting students for admission, more weight may have been given to their ideological soundness than their intellectual capacity or previous schooling (Sidel, V. and R. 1983, 225). "For ten years no full-length courses in Western medicine were given in China with the result that no one graduated as a fully qualified doctor" (Garside, 1981, 71). Key Fung, who graduated from medical school in China after the Cultural Revolution and who is now studying in the United States, felt that while the rest of the world went forward in health care

and medicine during the revolutionary period, China made no progress at all (Dr. Key Fung, Personal Communication).

When Deng Xiaoping took full power in 1979, he instituted a program of "four modernizations" in industry, agriculture, science and technology, and national defense, with all goals to be attained by the year 2000 (Garside 1981, 70). As a pragmatic leader, Deng realized the need for higher standards of education if his goals were to be achieved. In medical schools, training was changed from two-and-a-half or three years to five to eight years--the duration prior to the Cultural Revolution. Admission requirements again were based on grades and examinations (Sidel, V. and R. 1983, 326).

Although barefoot doctors' education also underwent some improvement, Deng himself was not among their greatest admirers. He felt that their healing powers had been exaggerated. Once, during the Cultural Revolution, he walked out of a movie that showed a barefoot doctor going way beyond his training to administer a cure. Shortly afterwards he told a visiting public health delegation:

> Barefoot doctors cannot reach heaven at a single bound. The barefoot doctors have only just begun; their knowledge is slight. They can only treat a few common illnesses. After some years they will put on straw shoes, that is, their knowledge will have grown. A few years more and they will wear cloth shoes (Garside 1981, 71).

In early 1976, when the "Gang of Four" were trying to keep

Deng out of office, they cited this comment against him: "The unrepentant capitalist roader (Deng) has even advocated that barefoot doctors wear cloth shoes and leather shoes....This means wearing capitalist shoes and following the revisionist road" (Mann 1985,. 11).

Just as the initial training and responsibilities of the barefoot doctors have varied since 1977, so have the changes in their roles and education. For example, rich brigades and communes have more extensive barefoot doctor programs than poor ones. It is these relatively rich communes that visitors are taken to see and write about. Training has become longer and more theoretically based. Initial training now takes a minimum of six months, and some or all of it is given at the county hospital rather than the commune hospital (the three-month Model 1 has been expanded.) There is more study of the preclinical sciences such as microbiology and pharmacology. Continuing education has been greatly expanded. Specialized courses are now given at the commune or county hospital in three-month periods in such fields as traditional medicine, basic surgery or other primary care responsibilities. Some provinces have set up schools for barefoot doctors offering courses that last a year. These courses are usually given during quiet periods of agricultural activity (Sidel, V. and R. 1982, 42). One commune set up a special three-times-a-week, four-year television course (Rosenthal 1987, 22).

It is interesting that just as feldshers do not teach other

feldshers in the Soviet Union, barefoot doctors nowadays rarely train other barefoot doctors in China. Doctors from urban hospitals travel to commune or county hospitals to give the training. More of this is provided by physicians permanently assigned on a salaried basis to the commune. The role of mobile medical teams, so important initially, is now diminishing (Sidel, V. 1982, 42).

Perhaps the greatest change has been the certification program for barefoot doctors, which requires examinations. New policies were put in place from 1979 to 1981. A two level examination was instituted - a Barefoot Doctor Basic Competency test which led to the title Accredited Barefoot Doctor, and a more advanced examination conferring certification as a County or Village Doctor. Those who failed the exam were given further training and another chance to take it while still being permitted to carry out certain functions.

Victor and Ruth Sidel gave statistics from several communes on the passing rate for barefoot doctors. In most of the communes eighty percent or more passed. (There were special categories of barefoot doctors who could become certified without taking the exams and were therefore "grandfathered" in.) As for certification as a village or county doctor, the Ministry of Health reported that by September, 1981 one-third of the 1.5 million barefoot doctors in the country had obtained village or county doctor certificates (Rosenthal 1987, 21). A small percentage of places in medical schools were to be reserved for

the most promising barefoot doctors.

Other features of the new policy written from 1979 to 1981 were that barefoot doctors were to become the equivalent of three-year medical school graduates (assistant doctors), serve as full-time practitioners and receive salaries instead of work-points (Rosenthal 1987, 5). Finally, in 1985, the Ministry of Public Health decided to stop using the term barefoot doctor. From then on, those who passed the examinations for practitioners and a secondary medical school examination would be known as rural doctors. Those who failed such examinations would be called medical orderlies (Public Health in the Peoples Republic of China 1986, 206).

Although it is too soon to assess its full impact, this recent requirement of more education and higher standards for the barefoot doctor has already led to changes: a decrease in the number of barefoot doctors and an increase in their professionalism. Both of these will be discussed in a later section. In reporting the change of title from barefoot to rural doctor, the Los Angeles Times used the headline "Idealism Yields to Certification Exams."

Present Strengths and Problems of the Barefoot Doctor

By whatever name he or she is called, the barefoot doctor is the bedrock of the Chinese rural health care system. Their greatest strength is that for millions of people they literally

are the first tier of defense against health problems, the first medical authority whom a peasant or a poor city worker will consult and be examined by. They are in the forefront of disease prevention work in the provinces, supervising, educating, or working alongside the peasants in eliminating pests, improving sanitation and the environment. Since barefoot doctors often spend their entire lives in their own towns and districts, they are familiar with local conditions and local people. They can build a special level of confidence with the patients they treat.

Finally, for some Chinese peasants, the job of a barefoot doctor offers a unique opportunity for advancement and reward. Especially in recent years, when brigades have been sending young barefoot doctors, male and female, for advanced training in large medical centers, the peasant with talent and skill has a chance to develop his or her potential and attain a new status in the community and the system itself.

Nevertheless, the institution of the barefoot doctor today faces formidable problems, principally relating to (1) their economic status and (2) their questionable education.

Economic Status. While preventive care and public health programs in the People's Republic of China are almost totally funded by the government, other health care services cannot be called free. Patients pay for primary health care, including the costs of supplies and drugs. The barefoot doctor, as the provider of primary care, is paid by patients, either directly or

through some form of insurance which the patient pays for at least partially. In urban areas the employer helps pay for this insurance. In rural areas the insurance comes from a cooperative medical insurance system which is funded by each local collective's welfare fund and the individual monthly premiums paid by the peasants (Hsiau, 1984, 933).

This system of payment has evolved over the years. In the original barefoot doctor program in the mid-1960s, the intention was for the doctor to receive the same income as an agricultural worker, despite spending considerable time in medical functions. A commune worker's income was determined by the commune's total income plus the number of work-points collected by the individual. The barefoot doctor's "medical work-points" counted exactly the same as if he had been doing agricultural work during the same period.

The salary paid an agricultural worker was approximately half as much as that of a fully trained doctor assigned to a commune. On a visit to China in 1971, Victor Sidel was told that beginning doctors earn 600 yuan ($240) per year as compared to 300 yuan ($120) or less earned annually by peasants--including barefoot doctors (1972, 1295). Paul Picowicz reported similar salaries for barefoot doctors in the Tungping Brigade of Chiagchen Commune, while in some brigades where production was off, the annual salary was only 200 yuan, or $80.) According to a survey made by two Chinese authorities, Gong You-long and Chao Li-min, in 1980, the average income of female barefoot doctors

was only seventy-five percent that of males (1982, 60).

It has already been noted that the barefoot doctor's medical work-points counted exactly the same as his agricultural work-points in determining his income. As a result, in many cases, the doctor found he could make more money working as a farmer than as a physician. The discrepancy increased when peasants were permitted to work their own plots privately in addition to their work for the commune. Consequently, some barefoot doctors gave up their medical chores completely to spend more time in the fields.

In 1980 the government instituted "the production responsibility system" to spur farm productivity and output. Considerable autonomy was given to communes to determine what methods and incentives would best increase productivity in their areas. Most permitted peasants to sell for their own profit all their produce over a certain quota. Thus the emphasis was on producing the maximum possible crops (Chen 1983, 1411-1417).

Although the system increased production dramatically, it had an adverse effect on the economic status of barefoot doctors. Individual peasants, working their own plots, began contributing less to the brigade welfare fund which helped support the cooperative medical insurance system. In some areas, insolvency and even shutdowns of the insurance system occurred, so that payment to the barefoot doctors came late or not at all. Some doctors set up fee-for-services practices rather than being paid out of the welfare fund, charging for consultations,

prescriptions, drugs and vaccines (Young 1986, 109). Others simply resigned--in several instances en masse. The ranks of the barefoot doctors were thinned from 1.76 million in 1977 to 1.67 million in 1979 and 1.46 million in 1981 (Chen 1983, 1412).

To deal with this fall-out, in 1981 the Ministry of Health persuaded the State Council to adopt a new economic policy for barefoot doctors. There were three main provisions: (1) Those who passed the Barefoot Doctor Basic Competency examination were to be full-time and paid the same amount as brigade school teachers. (2) In mountainous, remote and low-income areas the local government was to provide direct cash subsidies. (3) Those barefoot doctors who were still "training up"--i.e. had not yet received their certification--were to get their usual work-points plus a bonus, the latter given in answer to complaints that their work-points were not keeping pace with the rising income of their fellow workers with private plots.

Education. From the start there were serious problems with the education of the barefoot doctor. Back in 1965, it may be remembered, Mao Zedong himself had derided traditional medical education, saying "There's no read to read so many books" and urging that countryside doctors "study and raise their standards mainly through practice" rather than spending so much time in medical school.

One result of this kind of thinking was that many of the early barefoot doctors went about their work with enthusiasm and dedication, but with very sketchy information and almost no

experience. Three months training was simply not adequate for many of the health care problems they had to deal with.

The most impartial and, seemingly, accurate appraisal of the barefoot doctors' abilities was given by the Rural Health Systems Delegation, a team of nine American physicians and scholars sent to China in June and July of 1978 under a grant by the U.S. Department of Health and Human Services as part of the U.S. China Scientific and Cultural Exchange Program. In the Delegation's report, Dr. Everett M. Rogers of Stanford University wrote:

> We concluded that China's barefoot doctors are not the paramedical superhumans that some previous accounts might lead one to expect. Barefoot doctors make mistakes in diagnosis, in referral decisions, and in treatment... In many of our briefings at commune and county hospitals and in the Ministry of Health, we were told that barefoot doctors were not the ultimate solution to China's health care delivery problems. We were told that barefoot doctors require upgrading in technical knowledge and skills, and that eventually better trained barefoot doctors and physicians will deliver some of the primary health care barefoot doctors now provide (1980, 57).

The report documented a number of serious errors due to educational and experimental shortcomings. Among these were diagnosing lobar pneumonia as a common cold and mistaking tuberculosis of the bone for arthritis. One barefoot doctor was unable to explain the use of chlorpromazine, one of fifteen medicines she carried. Some of the barefoot doctors were found to be ignorant of the uses and toxicities of many of the drugs in

their medical bags.

Others had a "penchant for experimentation" with their own treatments. Sometimes these experiments produced unexpectedly positive results, however. For example, in Wangzan Commune in Shinshi in 1970, several barefoot doctors read about an agricultural chemical, identified as No. 920, that stimulated plant growth. They thought it might work on human beings, too, and experimented upon themselves to make sure it was safe. Then they gave it to a woman who was losing her hair. Within forty days, her hair grew back. The case was reported in People's Daily as a model of how to combine the spirit of serving the people with practical skills and ingenuity.

Inadequate training was also apparent in the work of the urban equivalent of the barefoot doctors, known as red worker doctors or Red Guard doctors. Usually, "red worker doctors" refers to factory employees who get work-points for performing medical services for their fellow employees, much as barefoot doctors do for the peasants. Red Guard doctors serve within their own residential neighborhoods, and usually are retirees or housewives with very minimal training--sometimes only ten days. Red Guard is a term that seems to be dropping out of use, perhaps because of the connotations associated with it at the peak of the Cultural Revolution, when extremist Red Guard students committed many depredations against their fellow citizens. (For a detailed account of the Red Guard doctors, see Sidel, V., New England Journal of Medicine, June 15, 1972, pp. 1292-1298).

> doctors. Some doctors are criticized for neglecting service to the countryside... others apparently continue to resent the role assigned to the lower-level medical personnel... One doctor admitted that although he did not believe secondary medical personnel should be allowed to treat patients because their training was not adequate, now practice has convinced him it is better to have these personnel available since they "do a very good job in taking care of the sick." (Leo Orleans, 1969, 34).

Nowadays, the barefoot doctor-fully trained physician relationship seems to have evolved satisfactorily. The physician trains the barefoot doctor, imparting a good amount of practical knowledge. The barefoot doctor performs his function in the countryside, thus relieving many fully-trained physicians of the need to relocate to rural areas. Both parties seem satisfied with this balance. And for those barefoot doctors who are dissatisfied, there remains the option of pursuing studies at an urban or county medical school where he, too, can pass into the ranks of full professionalism.

The Barefoot Doctor Since 1980: Looking Toward The Future

> Once the goal of a society changes from serving the people to getting rich what is going to happen to the barefoot doctor? (Ruth Sidel, personal communication, November 17, 1988).

The decade of the 1980s has brought substantial changes in the status, function and operating methods of the barefoot doctor. The entire institution has moved in a new direction, and while it is too soon to discern what its ultimate destination will be, there is no doubt that the practice of rural medicine will differ vastly from Mao Zedong's 1965 vision of direct if rather rudimentary service to the people.

Several major changes are already apparent.

1. The number of barefoot doctors in practice is undergoing a decline. From 1977 to 1981 the total dropped from 1,760,000 to 1,575,000, according to Marilyn M. Rosenthal (1987, 5). Chinese Health Care, a volume published in association with the People's Medical Publishing House in Beijing, gives an official figure of 1,396,452 barefoot doctors in 1981 (115). The official approximation in 1986 was 1,290,000 (Public Health in the People's Republic of China, 53.) Dr. Ruth Sidel reports, in a typical example, that in the China-Romania People's Commune outside Beijing the number of barefoot doctors went from 450 for

a population of 46,000 in 1972 to 250 for a population of 48,000 in 1980--a ratio drop from 1:102 to 1:192. Similar patterns obtain in Shunyi County (including Beijing) as a whole, where the population increased from 450,000 to 467,000 in the decade of the 1970s, but the number of barefoot doctors fell from 1,400 to 1,200.

More recent figures than these are unavailable, but all signs are that the downward trend continues for many reasons. Officials of the China-Romania People's Commune explain the drop in barefoot doctors in these terms: "Some have become workers, some have gone into the army, some (usually women) have married and moved away, some were promoted to cadres and some went to the university." Actually, as will be seen below, the reasons are even more basic, reflecting the profound economic, social and political changes that have taken place in China during the 1980s.

2. Public receptivity of the barefoot doctors has changed. As Mao correctly observed, rural medical care had been in deplorable condition for generations, and the first barefoot doctors brought a welcome elevation of health care which was deeply appreciated by Chinese peasants. But as economic conditions improved, the expectations of rural farmers and workers increased. With their income rising, they began to demand higher quality medical care and to demand access to better-trained personnel (Hsiao 1984, 935). Peasants now are willing to pay for services at the commune health center or

county hospital and have bypassed barefoot doctors (Young 1986, 109). Better economic conditions have not improved the lot of the barefoot doctors as such. Many of them have found they can make more money farming, so they have abandoned practice. According to Ruth Sidel, very few have put up shingles and gone into private medical practice. She feels, however, that the fact that this is happening at all is significant, because it demonstrates that some barefoot doctors wish to move up through the medical ranks, and earn more money through medical practice rather than farming.

3. Barefoot doctors are playing a lesser role as China's health care system becomes increasingly modernized, along with the country's other social institutions and public services. It should be remembered that the original barefoot doctors were at least in part a political phenomenon, reflecting the Socialist fervor unleashed by Mao Zedong to reshape China. Nowadays, enthusiasm is no longer enough; the people simply demand more and better services. Many rural areas are becoming modernized. Fei Xiatong, China's best-known sociologist, said in 1985, "It's unbelievable to me how quickly the countryside is changing" (Los Angeles Times, Feb. 1, 1985).

It is also obvious that today's government in China is not exactly stressing grass-roots participation or individual freedom or responsibility. China is also not as anti-elitist anymore. "From 1965-1976 the emphasis was very anti-elitist, that was the point of the Cultural Revolution. It was no accident that

community health workers, barefoot doctors and red medical workers were the ones who were favored and trained in great numbers. They even went too far in saying barefoot doctors could do anything doctors could do."

4. China's health care needs are changing, along with the political climate. In 1965 the country's major problems included poor sanitation and hygiene as well as a lack of maternity care. As a result, prime causes of death included infectious diseases, tuberculosis, influenza and digestive diseases, as well as childbirth problems (Public Health in the People's Republic of China 1986, 95-96). In addition the peasantry was uneducated.

Conditions like these were ripe for the barefoot doctor. Better hygiene and sanitation helped reduce infectious diseases sharply, childbirth and maternity conditions were improved, the peasantry received instruction in basic home health care. In the political climate of the Cultural Revolution all joined enthusiastically in the effort to upgrade the health of the countryside.

Today the leading causes of death are cancer, stroke and heart disease, none of which can be cured by such simple measures as improving hygiene or giving inoculations. Modernization in other technical areas also affects the barefoot doctor. Better highways have made traditional doctors more accessible. China is a very mountainous country, so part of the problem in bringing doctors to the community was the difficulty of travel to rural communities. Some Chinese publications reported that barefoot

doctors had to cross mountain ridges on foot or walk for hours or even an entire day in order to reach a patient or fetch a physician (Hsu 1974, 126). Now it is far more expeditious for doctors and patients to reach one another, or for a patient to be brought to a rural medical center.

5. The change in the status of barefoot doctors has even been reflected, as previously noted, in the loss of their name. Writing to the editor of the Journal of the American Medical Association on June 24, 1988, Dr. Tsung O. Cheng, of George Washington University in Washington, D.C., points out that on January 24, 1985, China's Ministry of Health officially abolished the term barefoot doctor, renaming them "countryside doctors" if they passed the qualifying examinations or "health aides" if they failed them (3561).

Perhaps the best summary of the change that has occurred is that given by Marilyn M. Rosenthal:

> The barefoot doctor is now to be professionalized. To move the barefoot doctor toward increased professionalization is perhaps just as daring as Mao's original plan. It is part of the commitment to modernization of the current leadership and an example of the professionalization process taking place in other segments of the labor force as well. It also reflects the general return to power and dominance of the professionals and experts. There is some irony here as a political creation of the sixties brought to life outside the bounds of professional medical models and control, now moves back precisely toward that model and its influence.

Although the increased p[illegible]ssionalism of the barefoot doctors will bring many health benefits, it also presents certain negative features. The barefoot doctor established a unique intimacy with his patients; he treated them on a one-on-one basis, he made them conscious of basic health needs and procedures; he made house calls (Gong You-long and Chao Li-min, 59). During the 1980s many Chinese peasants began going to local or county hospitals for basic treatment, much as today's Americans go to emergency rooms rather than to a private doctor's office. The peasant may get somewhat superior medical treatment as a result, but it will be less personalized.

The drop in the numbers of barefoot doctors is putting additional strain upon the local health stations. William Hsiao contends that unless the salaries of barefoot doctors are raised considerably, there will soon be a manpower shortage of health workers in the countryside, creating medical care problems (1984, 935).

Finally, the decrease in numbers of barefoot doctors is having an adverse impact on disease prevention. Thanks to the barefoot doctors, schistosomiasis, for example, has been almost completely wiped out, following elimination of the snails that carried the disease. Prevention programs are not as profitable as medical treatment and many barefoot doctors no longer emphasize such projects. Peasants do not want to spend money on vaccinations without seeing the results. In addition, the low fees being charged do not compensate the barefoot doctor for the

time and effort needed for vaccinations (Young 1986, 109).

Ruth Sidel points out that insufficient numbers of barefoot doctors are available to carry out public health measures like checking water cleanliness. "The barefoot doctor and the health workers who worked under them were in charge of health education, immunizations and old-fashioned public health measures like checking for a clean water supply and collecting night soil (saving human feces in a vault until the bacteria die). If you use night soil as a fertilizer you must do it right or you will have epidemics. These issues may be neglected. With the pressure to make money, to grow food, to work in a factory, get rich, buy a TV, etc...unless they pay their barefoot doctors a lot of money, which to my knowledge they are not doing, public health may suffer."

Sidel also sees an adverse effect in family planning. The barefoot doctor often was involved on a close personal basis, even keeping track of contraceptives taken by individual members of the brigade. The result was careful birth control. "As barefoot doctors are trained and want to do more sophisticated work, who will carry out this important measure which is still so important in China?" (Interview with Ruth Sidel, Fall 1988)

Is The Barefoot Doctor Finished As An Entity In The Chinese Health Care System?

The most direct answer to the question above is a simple "No." However, it must be qualified somewhat, because while the barefoot doctor is likely to remain as an integral cog in China's health care machinery, he or she will be performing a role quite different from those "90-day-wonders" who answered the call of Mao Zedong to bring at least elementary health care to millions of Chinese peasants, farmers and villagers. Those primitive practitioners with their few medicines, simple instruments and timorous ministrations are gone, or at least are on their way out, in most areas.

However, they have grown into the Chinese medical system and left their mark on it by transforming it into a universal service in which virtually all the people, no matter how remote in distance or poor in belongings, can expect at least a minimum of health care. Some have developed into full-fledged physicians, and most of the others have become competent mid-level practitioners, serving in health stations, assisting full doctors, handling basic health problems, and treating uncomplicated diseases with a degree of expertise and confidence lacking in their predecessors of the 1960s and early 1970s. They truly are "village" or "countryside" doctors.

Certainly their education, leading as it does to official

certification, is superior to anything that their predecessors experienced. According to official Chinese figures, as of 1986 there were in existence a total of 1,349 medical schools specifically designed "to train and retrain rural doctors who are very popular among peasants for their competence in handling common diseases and injuries" (Public Health in the People's Republic of China, 53).

In fact, the project of upgrading the qualifications and abilities of the barefoot doctors has attracted support from outside China. Project HOPE, the American philanthropic organization, since 1983 has had an interest in promoting Chinese health care. In September 1989, it launched a program to educate Chinese barefoot doctors in some modern facets of medical care. This is a co-operative undertaking of Xian Medical University in China and the University of New Mexico in the United States. The Chinese are adapting a course initiated ten years ago at the University of New Mexico to further the practice of rural medicine. "We've done some case-writing and faculty development," reports Dr. Arthur Kaufman of the University of New Mexico Medical School. "We have visited their sites and they have sent their faculty to New Mexico." (Project HOPE Bulletin, Fall 1989). Project HOPE says the objective is "to recreate the corps of rural physicians (in China) that once provided primary health care to many."

All in all, then, the barefoot doctor of the future--who will no longer be called by that name--will be relatively

educated, sophisticated and expert in his tasks--a true mid-level practitioner. It also seems likely that there will continue to be a place for those barefoot doctors who do not move up the educational scale and remain fairly close to the skills--and the limitations--of the barefoot doctors of the 1960s and 1970s. China, after all, is a vast country, with many regions that will remain remote and primitive for decades to come. In such areas, the traditional barefoot doctor may be expected to continue to practice pretty much as he has for the last 25 years. As Witold Rodzinski points out, the countryside always lags behind the cities in making improvements and modernizing (Rodzinski, 91). Dr. Robert B. Taylor quotes Dr. Huang Chia-ssu, president of the Chinese Academy of Medical Sciences, as telling him: "At this time there are not enough fully trained physicians. The emphasis must continue to be on providing health care services to those that need it most, and hence the system will continue to rely on street, factory and barefoot doctors" (1981, 76).

So for the immediate future, at least, two levels of barefoot doctors seem likely to continue serving patients in rural China--the more sophisticated and advanced practitioners working in those areas which have relative prosperity and modernity, and their humbler--but no less useful--brothers and sisters still working in the vast Chinese hinterland, attending to basic health needs as they have for the last quarter century. Their numbers may be fewer but their tasks are no less important than in the past.

China, as we know from the tragic events in Tiananmen Square, is still a country undergoing change; the age-old battle between democracy and authoritarianism is still unsettled. We have seen that the barefoot doctor, in his most primitive form, flourishes in time of unrest and turmoil, while in time of tranquility and prosperity he figuratively puts on shoes, improves his knowledge and skill, and moves up the ladder of professionalism and prestige. The future place and status of the barefoot doctor depends upon what happens economically and politically in the China of tomorrow. But for the last quarter of a century he--and--she have served their country and humanity well.

Chapter V

The Physician Assistant

Need for the Physician Assistant

Although the physician assistants of the United States serve many of the same functions and needs as do the barefoot doctors of China and the feldshers of the Soviet Union, they came into being under different circumstances.

Unlike either China or Russia, the United States has long had a highly trained, fully professional medical establishment. It has also had a stable political climate. Nevertheless considerable unrest began to develop within the medical establishment during the 1960s, bringing about substantial changes in the American health system, some of which still persist. These changes may be summarized as follows:

1. In the mid-1960's there was a perceived shortage and maldistribution of physicians. The actual number of medical school graduates had not risen significantly since 1900, when 5,214 graduated from medical school to serve a population of about eighty million. In 1960 for a population of 180 million, there were only 7,081 graduates (Backup 1984, 203). On February 19, 1973, U.S.News and World Report published a feature article

with the title "Not Enough Doctors, What's Being Done?" The Center for Health Services Research and Development of the American Medical Association reported that there were 334,028 physicians in the U.S. U.S. News and World Report used the figure of 323,000 physicians based on government studies for the year 1970, and estimated that there would be 346,000 in 1973. This gave a physician-to-population ratio of one physician to every 636 potential patients.[12]

There had been a sharp decline in the physician-to-population ratio between 1900 to 1930, in part due to the 1910 publication of the Flexner Report which had caused many substandard medical schools to close (Kletke 1987, 5). Between 1930 and 1960 the ratio had stabilized. The article in U.S. News and World Report reported that a desirable ratio would be one physician to 500 patients, although Dr. James Warren, a participant at a symposium in 1968 in honor of Dr. Eugene Stead, the founder of the physician assistant (PA) concept, said that there was no way to determine the best ratio of physicians to population. Other factors such as health care requirements, ancillary medical resources, and demographic and socioeconomic factors all play important roles in determining physician needs.

No matter what the ratio was, most observers agreed that there was a maldistribution of physicians. Most of the physicians in practice were concentrated in large cities and

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[12]The physician to population ratio is defined as the number of physicians per 100,000 population and is the most widely used method for analyzing the supply of physicians (Kletke 1987, 5).

metropolitan areas, with fewer in rural or more remote regions. Similarly within big cities, most doctors practiced in upper or middle class sections, while the inner cities were poorly served. In 1970, 86.6% of all non-federal physicians were located in metropolitan areas. This situation has not improved since then. In 1986, 87.9 % of physicians lived in metropolitan areas (Physician Characteristics and Medical Licensure in the U.S. 1987, 88).

In many under served rural areas, the ratio of physicians to population was greater than 1:5000. In 120 counties there were no physicians at all (Lippard 1973, 26). In 1986 there were 126 counties, thirty five percent of the U.S. land area, without a practicing physician in patient care.[13] The situation was not much better within many cities. The 1973 article reported that while some sections in New York City had one doctor for every 300 people or about twice the national average, the Bronx had a ratio of less than 70:100,000 people. To make matters worse, people who live in the inner city often have more illnesses than residents of more prosperous neighborhoods. This is still

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[13] A personal anecdote - A few years ago I spent two weeks at a camp in Dubois, Wyoming, a town with a population of 1,067 (1980 Census). The nearest cities with physicians and hospitals were located 75-90 miles away. There was a medical clinic in town directed by a paramedic. We were assured by the camp's organizers that if there was a need for medical service, a helicopter would be flown in. This made the maldistribution seem the more real to me.

true.[14] In short, "trained manpower was not to be found at the right place, at the right time in many parts of the nation" (Lippard 1973, 5).

Another criticism of the physician population was that a large percentage were foreign medical graduates. The Department of Labor disclosed that in 1963 one out of nine doctors were trained abroad whereas in 1970 the proportion was one in five. In an essay written during the period, two physician assistants pointed out that while some of the criticism of foreign medical graduates was openly racist, "some was based on a desire to have care delivered by someone of similar cultural and language background" (Backup 1984, 205).

2. The number of general practitioners or "family doctors" underwent a sharp decline in the 1960's with most doctors entering specialties or going into research. In 1923, 89 percent of U.S. physicians were general practitioners; by the mid 1960s the figure had fallen to 25 percent. "The general practitioner was a disappearing breed" (Bottom 1987, 639). At an annual health conference at the New York Academy of Medicine on issues in primary care, Dr. Milton Terris reported that "the number of GP's in office practice per 100,000 fell from 83 in 1940 to 24 in

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[14] In a dramatic report in the New England Journal of Medicine, "survival analysis showed that black men in Harlem were less likely to reach the age of sixty-five than men in Bangladesh" (McCord 1990, 173). Unfortunately, this problem cannot be remedied simply by having more health personnel in Harlem, since "poverty, inadequate housing, psychological stress, substance abuse, malnutrition and inadequate access to medical care" all are contributors.

1972. During that same period pediatricians and internists in office practice increased from 6 to 17 per 100,000 population, but the total number of primary care physicians fell from 89 to 41 per 100,000, a decline of 54 percent" (1977, 129).

The use of physicians for activities such as routine physical exams, diagnosing common illnesses, and conducting education or counseling in primary health care techniques was not regarded as cost effective. One author labelled this "physician malutilization." In 1967 a survey of the American Academy of Pediatrics documented the fact that a high proportion of pediatricians in office practice were performing tasks that did not require a medical degree, such as weighing infants and children, vision screening and urinalysis. Surveys of internists and family physicians yielded comparable results (Yankauer 1982, 252).

4. The advent of Medicare and Medicaid in 1965 as well as the growth in the number of people covered by private health insurance, was perhaps the most significant change for both consumers of health care and the practitioners. In 1940, less than 10% of the population had coverage for inpatient care. In 1979, four out of five Americans under the age of 65 had private health insurance coverage for inpatient services provided by both hospitals and physicians, and 65% had some type of coverage for out of hospital physician visits. Medicare covered almost all American citizens over age 65, and Medicaid, under which beneficiaries must show financial need, covered an estimated

eleven percent of the population (Williams 1984, 355). A person's financial state now became less of a barrier in obtaining health care and demand for physician services consequently increased.

5. People came to regard adequate health care as a right and not just a privilege reserved for the financially able. Paul Starr, a medical sociologist argues in favor of health care as a right and observes that it grew out of the broader "generalization of rights" that occurred in the United States as a whole following the momentum and inspiration of the Civil Rights movement (1982, 388-389). In greater numbers than ever, people began to seek out medical and health care advice on all levels from geriatrics to pediatrics. With physicians in short supply, a need grew for mid-level practitioners who could provide basic services.

6. The Civil Rights movement may have played a strong part in the general feeling that there was an under-representation of minorities in the health care field which could be redressed quickly only by training minority men and women in mid-level work. Statistics certainly bore this out. In the year 1970, only 697 first year medical students were black out of a total of 11,225. Minorities as a whole (Blacks, Hispanics, Native Americans and Chinese) made up only 8.9% of the first year class. Rocio Huet-Cox gave ever more dramatic statistics: In the year 1968, Blacks, Native Americans and mainland Puerto Ricans together made up only 2.9% of the entering class in medical

schools (1984, 132).

7. There was an increased demand for health services due to the change in the U.S. population. In a widely publicized report by the Surgeon General's Consultant Group on Medical Education in 1959, it was predicted that there would be a rapid population growth among the young and elderly, groups that have more illness and disability (1959, 5).

8. Concurrent with these changes in the demand for health care, there existed in the United States in the late sixties a pool of trained personnel able to provide medical care. In the last years of the decade, a large number of medical corpsmen who had served with the U.S. forces in the Vietnam War began to return from active duty and to resume civilian life. About 30,000 medics a year with $10 million worth of training were being discharged (New York Times Dec 13, 1970, 80). One third of these men found their way into civilian health employment, one third chose to forget their training, while one third wanted jobs in the health area but couldn't find them. Many of these were available for work as physician assistants.

In conclusion, the need for health care in the U.S. in the early 1960's met most of the conditions listed in the hypothesis of this paper, and gave rise to the new profession of physician assistants. There was a shortage as well as a maldistribution of physicians. Popular unrest was questioning the established tradition of health care, and the medical establishment itself was undergoing change. Even though the government did not

establish a crash program to create mid-level health professionals, the new profession of physician assistant nevertheless developed.

To deal with the health-care shortages and maldistribution arising from the factors listed above, the United States had two options: (1) to educate more fully-trained physicians or (2) to create a new class of mid-level practitioners. In the 1960's and 1970's, experiments were tried using both approaches.

To increase the number of fully trained physicians, medical schools increased the size of their entering classes, new medical schools were established and some schools tried decreasing the length of medical education (Huet-Cox 1984, 140). As a result, the physician-to-population ratio per 100,000 did rise from 142 in 1960 to 230 in 1986 (Physician Characteristics and Distribution in the U.S. 1987, 13). Although some observers predicted a physician surplus by the mid 1980's, a recent article in JAMA argues that "the rise in demand for physician services has equalized or exceeded the rise in supply and gives no evidence of the physician surplus of 70,000 predicted for 1990 by the Graduate Medical Education National Advisory Committee and other analysts" (January 26, 1990, 559). The problem of distribution does remain, with 85.7% of all doctors practicing in metropolitan areas in 1970 and 87.9% in 1986 (Physician Characteristics and Distribution in the U.S. 1987, 13). However the number of physicians in primary care specialties has

increased from 137,975 in 1963 to 226,902 in 1986.[15] The rest of this chapter will be devoted to the second course of action, the creation of the mid-level health professional.

The idea for intermediate health professionals in the United States was first proposed in 1961 by Dr. Charles Hudson, president of the National Board of Medical Examiners. He suggested the creation of "one or two groups of assistants to doctors from non-medical, non-nursing personnel" (839). These assistants would be trained to perform many routine patient care functions.

However Hudson's ideas were not implemented until 1965, in three different programs. Although these programs had different philosophies behind them and included nurse practitioners as well as physician assistants, they all shared one common goal: providing more accessible health care.

Credit for the new profession of physician assistant also belongs to Dr. Eugene Stead, who set up the first actual program at Duke University in North Carolina in 1965.[16] Although not quite as radical as Mao Zedong about who should deliver health care, Dr Stead's beliefs differed from the conventional medical viewpoint of the time in that he held that all medically trained personnel had an important role to play in the care of the

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[15]Primary care specialties are usually considered family practice, general practice, internal medicine and pediatrics.

[16]In 1970, Dr. Stead was awarded the Abraham Flexner Award for Distinguished Service to Medical Education. He is still writing on a variety of topics, including the role of technology and computers in medicine.

patient.[17] Dr. Stead believed that everyone who worked in the health care area had some contribution to make to the well being of the patient.

> Each of us in the health field has one primary responsibility: to minister to the needs of people in accordance with his ability. In the total care of the patient there is no sharp dividing line between the activities of the maid, the orderly, the aid, the practical nurse, the registered nurse, the dietician, the technicians of various kinds, the professional nurse, the dentist, the doctor (1967, 949).

Dr. Stead organized his program at Duke University after the National League of Nursing had turned down Duke's request for accreditation of a Master's degree program intended to train nurse practitioners (Yankauer 1982, 253). Nurses at that time were seeking greater independence from physicians and did not want to enter a program taught by doctors in which nurses would practice only in a delegated role--i.e., limited to carrying out doctors' orders under close supervision.

The Duke program, two years in length, aimed to train a new health team member called a "physician assistant." To enter, the only education requirement was a high school degree. Initial recruitment was aimed at military corpsmen. Although students from all backgrounds were accepted, the first class consisted of

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[17]. It is interesting, although coincidental, that the first physician assistant program began in 1965, the same year that Mao Zedong was proposing the need for barefoot doctors in China.

four ex-corpsmen. Graduates received a certificate. They were employed individually by doctors, with their duties depending upon their employer. The expressed philosophy behind the program was that "the physician assistant can be taught to perform any procedure which requires skill and which is repeated frequently...He is trained to be an extension of the doctor's arms and legs" (Andreoli 1967, 1443).

The second program aimed at creating a new mid-level provider, the nurse practitioners (NPs). Developed jointly by the School of Nursing and School of Medicine of the University of Colorado in 1965, the program prepared professional nurses to give comprehensive well-child care to children in an ambulatory setting.

Nurses received initial training of four months, learning such skills as physical assessment and patient interviewing. Afterwards, the NPs practiced either in the offices of pediatricians in private practice or in health stations and field offices in low-income and rural areas. The nurses had the capacity to "furnish comprehensive well-child care to children of all ages, identify and appraise chronic conditions and refer patients elsewhere, and to evaluate and temporarily manage emergency situations" (Silver 1967, 443). There is a slight similarity here to the barefoot doctor in China, in that many of the duties were the same and in that both worked mainly in rural areas, but an important difference is that the nurse practitioner was always under a physician's supervision.

The third program, MEDEX, based at the University of Washington in Seattle, was initiated in 1969. Unlike the two previous programs, it enrolled only returning military corpsmen. The program was described as "a model of non-physicians extending primary medical care transferable to rural, suburban or urban settings" (Smith 1970, 1843-44). The students received three months of university training followed by twelve months of preceptorship with a practicing physician. Those who completed the training received certificates and were employed as assistants by the physicians with whom they had served their preceptorship. They could also work for other doctors subsequently.

I will make no attempt to describe the further evolution and training of the physician assistant. Suffice it to say that numerous studies have shown that the quality of care delivered both by physician assistants and nurse practitioners has been equal to that delivered by physicians and in some cases has been rated superior (Yankauer 1982, 250). These new health practitioners have been well accepted by both physicians and the public.[18] Although there are important differences between the perceived roles of physician assistants and nurse practitioners (the medical profession views PAs as physician extenders while

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[18]A personal anecdote: When I was a nurse's aide in the pediatrics clinic at Presbyterian Hospital in New York, I was a bit surprised and impressed when a physician told the mother of a newborn baby to go to a pediatric nurse practitioner rather than a physician since the former was more skilled in providing care for the infant and in patient teaching.

nurses view NPs as RNs in extended roles), in actual practice their functions are usually similar.

Most physician assistant programs today are two years in length and combine theory with clinical practice. In 1988 there were 49 programs accredited by the Committee on Allied Health Education and Accreditation (Allied Health Education Directory 1989, 276). Applicants are less likely to have as extensive a health care background as they did in earlier years. However, their educational credentials are usually greater; in fact, most now have obtained college degrees before entering the programs. Most physician assistant programs offer a bachelors degree rather than a certificate. Although most early physician assistants were male, today females make up about half of the usual PA class. Currently there are 20,000 physician assistants practicing in the United States (Telephone communication Jan. 1990, National Commission on Certification of Physician's Assistants).

An important change has occurred in the practice environment of the physician assistant. In the beginning, as noted, most PAs worked as assistants to doctors in private practice, almost always in an office setting. Now more are working in hospitals, ambulatory emergency rooms, neighborhood clinics, large group practices or health maintenance organizations. They may also serve in areas where fully trained physicians would prefer not to practice, such as occupational health settings, prisons, long-term care institutions, rural areas and inner city ambulatory

clinics. James Cawley, an authority on the physician assistant, says that they not only exhibit "practice versatility" (working where needed) but that they have shown that they are cost effective. It costs less to educate physician assistants than full doctors and it costs less to employ them.

An example known to me personally of a physician assistant who is employed in an area where most doctors would prefer not to venture is Dawn Morton. She is a PA at the Bedford Stuyvesant Family Health Center in Brooklyn with the position of Coordinator of the Brooklyn Team of Health Care for the Homeless.

During a student internship in the spring of 1987, I had a chance to see how she worked. She would travel with a social worker and medical assistant to three different soup kitchens in impoverished areas and make physical assessments, diagnose illnesses, prescribe and dispense medications, provide basic health education and counseling, and refer patients to physicians as needed. In my judgment what she did was indistinguishable from what a physician might do in providing primary care. She was not just "an extension of the arms of a physician," but an actual substitute for one.

Although physicians were present at the Bedford-Stuyvesant Family Health Center, they did not go forth to the soup kitchens or other places where the homeless people who needed care actually frequented.

Ms. Morton told me that most classmates also went to medically under-served areas when they graduated. However, most

of these were in inner city areas such as New York. She knew of only one individual who had gone off to work in Appalachia, yet she pointed out that it was not just the rural areas in the United States that were in dire need of an increase in health services. "The private doctor is not going to open a big beautiful office in Bedford Stuyvesant," Ms. Morton commented.

Ms. Morton says she regrets what she regards as a growing tendency of PA graduates today to go into the field of hospital surgery since these positions usually pay better than inner city jobs. In many cases a surgeon needs help while performing operations, and a physician assistant can provide an extra set of useful hands. Furthermore it is less expensive for a hospital to employ a physician assistant rather than an extra surgeon.[19] I asked Ms. Morton whether she believed she gave better care than a physician. She replied that what she did (performing physicals, diagnosing and treating common problems and having the knowledge when to refer) she did well, but it could only be considered better because she had more time to spend with an individual patient.

To round out the picture of physician assistants in the United States, I would like to comment on nurse practitioners who have developed simultaneously with the physician assistant as

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[19]. A look at the advertisements for physician assistants in the New York Times on February 4, 1990, confirmed Ms. Morton's observations. There were nine ads for physician assistants, of which eight were from hospitals and one from a health maintenance organization. Most of the hospitals wanted physicians in the area of surgery.

mid-level health workers.

Nurse practitioner programs are either certificate programs that last from eight to twelve months, or master degree programs requiring one or two years of study. In 1990 there were 17,534 certified nurse practitioners in primary care specialties. These include nurses certified by the American Nurses Association in five specialties; adult nurse practitioners, family nurse practitioners, pediatric nurse practitioners, school nurse practitioners and gerontological nurse practitioners as well as nurses certified by the National Association of Pediatric Nurse Associates and Practitioners (Pat Markway, Telephone communication, American Nurses Association, April 24, 1990). In addition there are several nurses association such as the Nurses Association of the American College of Obstetricians and Gynecologists who certify nurses in specific specialties. Like physician assistants, nurse practitioners work in a variety of roles and settings. Ms. Morton reported that the head of the Bronx team providing health care for the homeless is a nurse practitioner, and that the role of the nurse practitioner and physician assistant is identical in that setting.

I have little doubt that the physician assistant/nurse practitioner will continue to play a vital role in this country's health care system. As an institution that is less than twenty years old, they are just coming into their own. Their roles, places of employment and working environment may change, but they will continue to go where they are needed.

Chapter VI

Conclusion

China, the United States and the Soviet Union are three very different countries in terms of government, politics, history, standard of living, cultural background and basic medical care system. Perhaps the only two things all three have in common are their large size and population. Yet all three rely on mid-level health practitioners to provide basic health services to relatively large numbers of patients. In the Soviet Union and in China mid-level health practitioners provide care to millions of patients. The physician assistants in the United States total about 20,000 but they have become a new and significant part of modern health care. Although the roles, functions and educational requirements of these mid-level health practitioners will continue to evolve and change, it seems unlikely they will ever disappear from any of these countries for four reasons.

1. Educating fully trained physicians has become increasingly costly both to the students and their training institutions.

2. Even if a country does produce enough physicians, the problem of maldistribution has always existed and will always

remain. In addition to the obvious attraction of city life, most medical school graduates prefer to have access to hospitals with sophisticated technology.

3. It is not always necessary to have fully trained doctors treat many illnesses or provide primary medical care.

4. Being seen by a mid-level health practitioner may have added value for a patient because the mid-level practitioner often is closer to the patient's own background. This point will be discussed in more detail later on.

The hypotheses generated prior to the study and stated earlier describes several conditions under which mid-level health practitioners flourish. The results of this thesis support the existence of such conditions.

The first two conditions were that mid-level health practitioners are of particular value 1) in countries with a remote or scattered population and 2) when there is a shortage of fully trained physicians. The Soviet Union and China do have scattered populations with a large percentage of people in hard-to-reach areas. The United States also has a medical maldistribution problem which, though less acute than Russia's or China's, nevertheless requires some alleviation by mid-level practitioners. The third condition states that mid-level practitioners increase in number and importance when popular unrest or upheaval challenge established systems or traditions of health care. The activities of feldshers in Russia increased during the upheaval of the early Bolshevik days following the

Revolution. The birth of the barefoot doctor in China was directly linked to the chaos of the Cultural Revolution. Although the sixties in the United States were not comparable to the 1917 Revolution in Russia or the Cultural Revolution in China, they were a period of relative unrest with many people questioning government policy in many areas from the Vietnam War and civil rights to the established system of health care.

The fourth condition, that centralized governments can initiate a crash program to create mid-level health practitioners to help upgrade the public health system, became operative in China with the Cultural Revolution and to a lesser extent, in the United States with the advent of Medicaid and Medicare.

A Comparison of the Three Systems

Similarities and differences exist between the mid-level practitioners in the three countries. Some of the similarities are:

1. All three diagnose and treat common illnesses, prescribe some kinds of medication, and make decisions about when to refer. Patient counseling and education are always considered important aspects of their jobs.

2. All three serve areas where physicians are not available. In China and the Soviet Union this is in the rural communities, while in the United States this includes inner city areas as well as the rural communities.

3. In all three countries their educational requirements are changing. In the beginning, barefoot doctors only needed six years of primary school; now they must be middle school graduates. Originally, applicants to physician assistant programs needed only a high school degree; now some college is usually required. Although I could find no information on the changing educational requirements of feldshers, in 1987 the amount of education required for a physician was increased from six to seven years. It is likely that the Soviet Union will also raise the educational requirements for a feldsher.

4. In all three countries, the mid-level health practitioners are closer to the people they serve than are fully trained physicians. They generally talk in a non-technical language and have a better understanding of the patient's culture. As already indicated, this is most true in China, but in the Soviet Union feldshers are most likely to be from rural areas and in the United States the proportion of physician assistants from minority groups is higher than that of MD's.

5. All three countries provide opportunities in health care for men and women who would not have been able to become fully trained doctors for financial, educational, social, academic or other personal reasons.

Some of the differences among the three systems are:

1. In China, the barefoot doctor evolved from the people themselves. Although Mao made the statement, "In health care put the stress on the countryside", neither he nor anyone else

created a class of workers called barefoot doctors. Even the name "barefoot doctor" came from the peasants themselves. Until recently the government never regulated what these practitioners could or could not do. This is in stark contrast to the Soviet Union and the United States. The feldsher was introduced by Peter the Great, the head of state, into the Russian military. What these providers can and cannot do is spelled out in great detail in the document "Regulations Concerning the Rights and Duties of the Feldsher" issued by the Ministry of Health on June 6, 1946. Unlike the barefoot doctor, who originally worked part time in agriculture, the feldsher was always a medical worker.

In the United States, the role and education of physician assistants and nurse practitioners was created and defined by doctors and nurses already in practice and in power. Today each state regulates and sets legal limits on the role of nurse practitioners and physician assistants. In training these providers, the United States, like the Soviets and unlike the Chinese, offers formal instruction in schools.

The Soviet Union is the only one of the three countries whose official policy is that its mid-level health practitioner, the feldsher, is a provider only until sufficient physicians are available to serve the whole country. However, this "temporary" condition has existed for decades and shows every sign of continuing. It should be added that several Soviet republics have recently noted the value of the feldsher (see page 61). Mikhail Gorbachev's regime has acknowledged that problems exist

within the Soviet health care system, but has given no indication of an intention to diminish the role of the feldsher.

Ruth Sidel points out that the Chinese, in contrast to the Russians, have never adopted the attitude that barefoot doctors were a "stopgap" measure. Instead, the Chinese understand that mid-level providers fill a special function.

3. Another difference is that in the United States an evaluation was built into physician assistant and nurse practitioner programs. Definitive studies have been carried out to measure the quality of the health care the programs provide, as well as their cost-effectiveness. Because China is so large and poor, it would be difficult to do such research. However, China is just starting to publish evaluations of the barefoot doctor. I could not find any indication that the Soviet Union evaluates the feldsher on a large scale, although there have been studies of the health care they provide by independent researchers.

4. China is the only country in which the education of the mid-level health practitioner is tailored to an area's specific needs. This may be because barefoot doctors were actually educated on the commune where they would end up practicing. In the Soviet Union and the United States, students usually travel to a particular school for their education. In the United States, a physician assistant who treats the homeless at a soup kitchen in Brooklyn has basically the same education as one who treats migrant workers in New Mexico, even though the health

needs of the two populations might be very different.

5. In the Soviet Union and China, the feldsher and barefoot doctor are essential to the functioning of the country's health care system. In the United States, at this time, the physician assistant's function is highly desirable but less essential. The numbers of these personnel show this is true. Estimates of the number of feldshers range from one half to one million and there are at least one million barefoot doctors in China. In the United States in 1989 there were only 20,000 physician assistants. They were never part of a mass movement like the barefoot doctor was in China. Because the United States has good transportation, even people in remote areas can usually get to medical care or the care can be brought to them.

Areas for Further Study

I would like to conclude by raising a question which I believe is worthy of further study: Is the barefoot doctor or feldsher concept, which has proven so useful in China and Russia respectively, suitable for export either to third world countries or even to inner-city and ghetto areas of advanced countries?

1. Third World Countries - In 1979 Robert Blendon, of the Robert Wood Johnson Foundation, published an article titled "Can China's Health Care be Transplanted Without China's Economic Policies?" His answer was no. "China's health care system is a reflection of the way China has chosen to organize its national

life," he said. "It is not...a separable phenomenon...something that could be transported across international borders as could be done with a new vaccine or surgical procedure" (1453). However, in an article published in World Health Forum in 1981, nine health officials found that health auxiliary mid-level practitioners, had made important contributions in Latin American, Asian and African countries. These authorities concluded that "village health workers", indigenous practitioners somewhat analogous to the barefoot doctor, performed significant services in education, prevention and elementary medical care in rural areas (Werner 1981, 46-68). They could become a vital element in a country's medical services. Some places where these village health workers practice include Mexico, Columbia, Guatemala, Peru, Mozambique and Tanzania (Werner 1981, 46-68).

Although none is identical either to the Chinese or Soviet model, they meet a serious medical need in their country's poorer areas. In many cases their work is affected by political ramifications, since they may be used "as vehicles of a nation's overall political strategy" (Stark 1985, 269). Further investigation and research is necessary to determine the ultimate effectiveness of mid-level workers in these settings.

2. Inner city and ghetto areas - Several authors have expressed doubts about the value of the barefoot doctor and feldsher model for advanced countries like the United States. In the article previously cited, Blendon points out that of the physician assistants and nurse practitioners in the United

States, less than forty percent have chosen to locate in rural communities. Unlike China, he notes that U.S. medical personnel are under no compulsion as to where to serve. Another critic, Dr. Allan Lurie, wrote that the United States needed "fully trained qualified general practitioners, not half trained quasi-physicians" (1968, 1296). In 1977, Milton Terris, chairman of the Department of Community and Preventive Medicine at New York Medical College, deplored "feldhsherism", saying that the training of physician assistants and nurse practitioners in this country would lead to two separate classes of medical care and be "the epitome of class discrimination" (134). Dr. Terris cited the example of the industrialized countries of Eastern Europe, which have tried to increase the number of physicians rather than training mid-level health workers. Cuba went a similar route. It lost forty percent of its 6,000 physicians in the early 1960's, but by 1976 had increased their number to 9,000.

However, as a result of my research and interviews, I have come to the conclusion that it is entirely conceivable that under the right circumstances and in the right localities there may well be a place for an American equivalent of the barefoot doctor.

Dr. Blendon's contention that too many mid-level practitioners prefer to work in urban settings loses some of its validity when one realizes that there is a great need for such providers in inner-city areas. As Dawn Morton, the physician assistant who works with the homeless in soup kitchens pointed

out in an interview, "no doctor is going to set up a big beautiful office in Bedford-Stuyvesant, and not all the poor people who need help are in Appalachia."

Dr. Terris's argument that countries like those in Eastern Europe prefer to train full physicians rather than mid-level providers also seems irrelevant. There is no indication that the creation of the physician assistant is leading to a two class medical care system in the United States. Inner city patients get good basic care from the physician assistant, perhaps on a level with the care given by many full physicians in Eastern Europe or the Soviet Union where the process of becoming a physician is not as long and medical technology is not as well developed.

The nearest this country has ever come to using the Chinese model barefoot doctor was in the neighborhood health center movement of the late 1960's and early 1970's. At that time, people from the actual community were given basic training in health care and social services, and performed simple tasks like taking blood pressure and providing health education. However, most of these programs have disappeared because of decreased government funding. Reviving at least that aspect of the program which trained paraprofessionals from the community would be a step toward implementing the barefoot doctor concept in the U.S. and improving local health care.

While I was interviewing Dr. Ruth Sidel, we somehow got off the topic of <u>feldshers</u> and barefoot doctors and started

talking about teenage pregnancy. I had asked Dr. Sidel whether she thought barefoot doctors could work in this country where people were used to seeing not only fully trained M.D.s but superspecialists. She had no doubt that the concept could work in some form. She described a session she had attended at Planned Parenthood run by a Hispanic woman who had a little training from Planned Parenthood for ten teenagers from the neighborhood. "She was wonderful. No physician, even a sympathetic physician from the same cultural background as the clients could do as good a job as she did. By the time you go through medical school, internship and a residency program you have it rubbed out of you...How about training some women from the South Bronx and East Harlem who speak Spanish and are from the neighborhood, and training them to go door to door and talk about alternatives in contraception, condoms and AIDS...This would also provide jobs. We should use the talents and skills they have of talking to each other in their own language and I don't mean just Spanish."

I believe further research into the potential use of a barefoot-doctor equivalent in the urban setting of the United States would be a worthwhile project. As a result of my studies of the activities and achievement of mid-level practitioners in three very different societies, I have come to the conclusion that no one country has yet achieved the perfect health care model and that as we enter a new and changing era there is much that we can learn from one another.

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